San José State Catalog 2012-13 Departments and Degrees

CONTENTS

Aerospace Studies Department (Air Force ROTC)

College of Applied Sciences and Arts

Industrial Studies 214
408-924-2960
http://www.sjsu.edu/depts/AFROTC/
afrotc-det-045-group@sjsu.edu

Professors

LtCol Donald McFatridge, USAF, Chair

Assistant Professors

Capt. Robert Adamis
Capt. Dave Bautista
Maj. Jeremy Champagne
Maj. William Hampshire

Curricula

Minor, Aerospace Studies

Introduction

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 and many local community colleges. The Air Force ROTC program is designed to provide instruction in leadership, management, and national security studies along with military education and training. This prepares the cadet for assignment to positions of responsibility and importance in the modern Air Force. 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 while earning their college degrees.

Program Overview

Our faculty bring a wealth of experience and diversity to the program. Instructors are active duty Air 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 Force.

College students wishing to commission as an Air 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 Force officers with a 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 three 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 four-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 three 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 are enlisted in the Air Force Reserve and 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.

Scholarships are awarded in increments of two, three, and four years. Air Force ROTC offers several types of scholarships. All types of awards provide an allowance for books, most required fees and a monthly nontaxable stipend.

All scholarship cadets are required to meet certain academic, military, and physical fitness standards to earn and maintain scholarship benefits. In addition, scholarship recipients must be under age 31 as of 31 December of the calendar year during which commissioning is scheduled.

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 a career as an Air Force officer after graduation should contact the Department of Aerospace Studies.

Minor - Aerospace Studies

	Semester Units
AS 001A, AS 001B, AS 002A, AS 002B, AS 131A, AS 131B, AS 141A and AS 141B (12-16)	
Total Units Required	12-16

African Studies Program

College of Social Sciences

Business Tower 464
408-924-5568

Associate Professors

Cobie Kwasi Harris, Coordinator

Curricula

Minor, African Studies

Introduction

The Interdepartmental minor in African Studies consists of courses from anthropology, art, African American studies, history and political science. The interdepartmental structure of this minor will enable students, while pursuing degrees in specific disciplines, to concentrate their efforts more efficiently upon the African continent.

Minor - African Studies

	Semester Units
Core Course POLS 142, AFAM 111, HIST 105A or HIST 105B	3
Additional Courses Consult the Program Coordinator, Dr. Cobie Kwasi Harris, for selection of remaining courses/units.	12
Total Units Required	15

African-American Studies Department

College of Social Sciences

Washington Square Hall 216
408-924-5871

Professors

Steven M. Millner
Ruth P. Wilson, Chair

Curricula

BA, African American Studies
Minor, African American Studies

Introduction

The Department of African-American Studies is an indispensable part of the mission of the Metropolitan University. We provide the most comprehensive liberal arts education by training our students to appreciate diversity and greater toleration for the multicultural dimension of American society through our unique interdisciplinary curricula that focus on the following areas: crime/justice, politics, urbanization, religion, history, sociology/welfare, psychology, African history/politics, gender equality, aesthetics and general education courses. We also contribute to the scholarship in our field and are inextricably related intellectually and professionally to the local and national African-American communities through our membership and support of professional associations such as the National Council of Black Studies.

BA - African-American Studies

	Semester Units
General Education Requirements	51
American Institutions	(6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.	
Physical Education	2
Requirements in the Major	36
Area Requirements	18
Historical: AFAM 002A and AFAM 002B (6); AFAM 040 or AFAM 111 (3)	9
Social-Behavioral: AFAM 120 and AFAM 159	6
Cultural: AFAM 022	3
Senior Seminar	3
AFAM 198	
Electives in the Major	15
Complete five courses from: AFAM 105, AFAM 111, AFAM 115, AFAM 125, AFAM 130, AFAM 134, AFAM 142, AFAM 152, AFAM 156, AFAM 164, AFAM 165, AFAM 166, AFAM 190, AFAM 195	
Electives	31
A minor or double major is recommended (selected with advisor approval).	
Total Units Required	120

Minor - African-American Studies

	Semester Units
Required Courses	6
AFAM 002A and AFAM 002B	
Upper Division Electives	12
Chosen to complement the major (see department Chair or minor advisor for specific information).	
Total Units Required	18

Graduate Program

Students interested in the Master of Arts degree in Social Science with an emphasis in African-American Studies refer to College of Social Science Interdepartmental Graduate Programs.

American Studies Program

College of Humanities and the Arts

Clark Hall 419
408-924-1366

Professors

Scot M. Guenter, Coordinator

Assistant Professors

Todd Ormsbee

Curricula

Minor, American Studies

Introduction

The American Studies Program provides useful preparation for graduate study, for elementary or secondary teaching, or for careers in law, public service or government. In addition to the minor in American Studies, a student can receive a Bachelor of Arts in Humanities with an emphasis in American Studies through the Humanities Department. All American Studies courses, whether for a major, minor, or for general education, enhance our understanding of how our nation developed in the past, what it has become, and how these changes affect us today. Courses focus on subjects such as the American dream, interracial relations, environmental issues, popular culture and women's concerns.

Minor - American Studies

	Semester Units
Plan A AMS 001A, AMS 001B, AMS 169, AMS 179 and AMS 190	21
Plan B AMS 159, AMS 160, AMS 169, AMS 179, AMS 190 and HUM 101	18
Total Units Required	18-21

Related Humanities Programs

BA - Humanities, Emphasis in American Studies

For more details, see the Humanities Department listing.

English Credential Program, American Studies Emphasis

Administered by the Humanities Department, the single subject waiver program for an English credential with an American Studies emphasis prepares students for careers in teaching English and American studies in high school.

Anthropology Department

College of Social Sciences

Clark Hall 469
408-924-5710 (Anthropology)
408-924-5340 (Behavioral Science)

Professors

Chuck Darrah, Chair
Jan English-Lueck
William J. Reckmeyer

Associate Professors

Roberto Gonzalez
Marco Meniketti
Elizabeth Weiss

Assistant Professors

Guadalupe Salazar
Ninian Stein
Charlotte Sunseri

Curricula

BA, Anthropology
Minor, Anthropology
Minor, Native American Studies
Minor, Values, Technology and Society
MA, Applied Anthropology

Introduction

The BA in Anthropology prepares students for living and working in today's complex, culturally diverse world. Students majoring in anthropology gain knowledge about the different ways that humans have lived, both past and present, and they develop their abilities in applying this knowledge to contemporary issues. The anthropology major helps students develop skills in conducting research, analyzing data in a logical and consistent way, and communicating clearly and effectively. The skills and knowledge gained by students provide a solid foundation for many careers. Students majoring in anthropology complete a core curriculum that provides an overview to the discipline, as well as courses in cultural anthropology, archaeology, and physical anthropology. Departmental resources include archaeology, physical anthropology, and ethnographic laboratories. Anthropologists are employed in a great variety of public and private sector jobs. The Anthropology program provides appropriate preparation for professions such as law, medicine, business, social work, and health care, as well as the increasing number of jobs that require working in a culturally diverse environment. Anthropology is also an important component in a liberal arts education since it broadens our view of what it means to be human. The anthropology minor is flexible and it complements almost any major. Interested students are encouraged to pursue their minor in Native American studies.

The anthropology faculty are scholars who bring their research into the classroom in ways that engage students and enhance learning. There are many opportunities for students to become involved in research and service projects that further develop skills and the ability to apply anthropological knowledge. The department is committed to providing timely and helpful academic advising, as well as an intellectual environment that supports learning. Interested students are encouraged to call the department for additional information, including the availability of advisors who can answer your questions.

MA Applied Anthropology

The program will produce skilled practitioners at the MA level who can move into positions in the public and private sectors as researchers, administrators and program developers. They will do so by applying anthropological knowledge and skills to regional problems and issues. The core of the program is built around skill "clusters" and content "tracks". The program is built around three broad clusters of research skills that can be used within the different content tracks. The first cluster consists of basic and advanced ethnographic methods for understanding how social systems, including organizations and communities, function in the regional environment. The second consists of skills in applying anthropology to the planning and design of programs and organizations, services and artifacts. The third skill cluster concerns assessment and evaluation skills, especially those based on qualitative methods that complement the familiar quantitative methods. Content tracks are the substantive areas in which students will apply the skills they are learning. Tracks will be adjusted based on student demand, community needs, faculty expertise, and job opportunities. They are linked to partners in the university and the region whose interests, expertise and resources are complementary. The content tracks are (1) health care, (2) business and industry, (3) immigration and immigrant services, and (4) regional sustainability. Students will work in a variety of relationships with the people they serve, including advocacy, public anthropology, consultation, and employment. Students will be conversant with the ethical and political implications of each relationship, and the personal and professional skills needed to be effective. They will master a variety of models of application, such as needs assessment, program evaluation, social impact assessment, and risk assessment. While much of applied anthropology emerges from the subfield of cultural anthropology there are applied aspects to physical anthropology, especially in bioarchaeology and forensic anthropology. Archaeology too has applied facets in cultural resource management and museum studies. This proposal includes facets of all subfields although it is predominantly based in cultural anthropology.

Behavioral Science Program

The Behavioral Science Program is designed for students who wish to develop an interdisciplinary perspective on human behavior. The program is offered cooperatively by the Departments of Anthropology, Psychology and Sociology, although all academic advising is performed by the Department of Anthropology. Students majoring in behavioral science may also fulfill the requirements of the behavioral science/anthropology double major. This option is recommended for students who anticipate continuing their education beyond the BA degree. The requirements for the BA - Behavioral Science are located under the Behavioral Science Program listing in this catalog. The requirements for the behavioral science/anthropology double major are listed under the behavioral science section. Students interested in further information about the double major should contact the Department of Anthropology, 408-924-5710.

BA - Anthropology

Semester Units

General Education Requirements 42-45
Of the 51 units required by the university, 6-9 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Support for the Major 3
Complete three units from: SOCS 015, SOCI 015, SOCI 102, STAT 095, GEOG 101

Requirements in the Major 42

Core 15
ANTH 011, ANTH 012, ANTH 013, ANTH 131 and ANTH 191

Research Methods 3
Complete three units from: ANTH 149, ANTH 155, ANTH 157, ANTH 167, ANTH 168, ANTH 169

Cultural Anthropology 6
Complete six units from: ANTH 102, ANTH 105, ANTH 108, ANTH 125, ANTH 130, ANTH 132, ANTH 133, ANTH 134, ANTH 135, ANTH 136, ANTH 141, ANTH 142, ANTH 143, ANTH 144, ANTH 148, ANTH 149, ANTH 173, ANTH 175, ANTH 176, ANTH 177, ANTH 178, ANTH 179

Archaeology 6
Complete six units from: ANTH 143, ANTH 161, ANTH 162, ANTH 163, ANTH 164, ANTH 165, ANTH 166, ANTH 167, ANTH 168, ANTH 169

Physical Anthropology 6
Complete six units from: ANTH 151, ANTH 152, ANTH 153, ANTH 154, ANTH 155, ANTH 156, ANTH 157, ANTH 159

Anthropology Electives 6
All current upper-division anthropology courses. ANTH 180, 184, 187, and 195 as appropriate and with approval of advisor.

Electives 28-31

Total Units Required 120

Note: UNVS 015C may be used in lieu of the statistics course required by this major through the Summer 2014.

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.

BA - Behavioral Science

See index.

Minor - Anthropology

Semester Units

Complete two courses from: ANTH 011, ANTH 012, ANTH 013 (6)
Four upper division anthropology electives (advisor consultation available) (12)

Total Units Required 18

Minor - Native American Studies

Semester Units

Historical Core 3-6
Complete one or two courses from: ANTH 164, HIST 183

Cultural Core 3-6
Complete one or two courses from: AMS 159, ANTH 175, ANTH 176, ANTH 179

Additional Courses 9
Complete three courses from: ANTH 146, ARTH 182A, COMM 174, HIST 103, HIST 186, HIST 187, HIST 189A, MAS 105, WOMS 020, SOCI 162

Total Units Required 18

After consultation with an advisor, experimental courses (ANTH 196) may be used to fulfill minor requirements.

Minor - Values, Technology and Society

This interdisciplinary minor 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.

Semester Units

Core 9
PHIL 110 (3), ENVS 001 or TECH 198 (3) and GEOL 111 (3)

Electives 9

At least two courses must be taken from the following approved list selected in consultation with the program advisor to assure adequate breadth; the remaining course may be selected from the above core courses.</cstyle:>
Complete three courses from: ANTH 115, ANTH 146, BIOL 110, ENVS 117, HPRF 135, HIST 142, METR 112, PHIL 186, RELS 122, RELS 162, RTVF 110 (or equivalent on approval)

Total Units Required 18

MA - Applied Anthropology

Requirements for Admission to Classified Standing

Minimum requirements for admission to the Graduate Division are outlined in the Admissions section of this catalog. The university-level graduate application is separate from the application you send to the department. You will need to separately apply to the university to obtain approval for university-level admission and to the department to obtain approval for 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, upper division method in ethnography, or archaeology or osteology, upper division anthropological theory and six elective units in upper division anthropology (approximately 18 units); a 3.0 grade point average (B or better) in the last 60 semester units of undergraduate work as well as all anthropology courses. Information on dates and the program can be obtained at the department website: www.sjsu.edu/depts/anthropology.

Requirement for Admission to Candidacy for the MA in Applied Anthropology

General university requirements for admission to candidacy for the MA degree are outlined in detail in the Academic Regulations section of this catalog. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape. After the completion of 18 units in the graduate program and the completion of a project or thesis proposal the students' work will be evaluated by the department's graduate committee. If the performance of the student is satisfactory and the student is considered to be a potentially competent and mature practitioner, he or she will be advanced to candidacy. Students who fail to meet the expected standards will be terminated from the program.

Specific Requirements for the MA-Applied Anthropology

Each student is expected to successfully complete a project proposal after 18 units of course work. Students are required to demonstrate their competency with regard to writing skills as a requirement for candidacy by completing a project proposal. Students are expected to conduct original research and write a thesis or 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 requirements of the University's Institutional Review Board. Each program 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 area of application will be taken. Six additional units will reflect research or professional internships and thesis or project report preparation.

	Semester Units
Core Courses ANTH 230, ANTH 231, ANTH 232, ANTH 233 and ANTH 234 (15); ANTH 235 (*) (3)	18
Anthropology Depth Requirement Two 3-unit upper division anthropology courses approved by faculty advisors	6
Field of Application Requirement Two 3-unit upper division SJSU courses approved by faculty advisors	6
Thesis or Project Requirement ANTH 280, ANTH 298 or ANTH 299	6
Total Units Required	36

*Advisor approved elective may be substituted for ANTH 235.

Applied Sciences and Arts - Interdisciplinary Courses

College of Applied Sciences and Arts

Introduction

The following interdisciplinary courses are offered by the College of Applied Sciences and Arts to serve the various majors within the university.

Art and Art History Department

College of Humanities and the Arts

Art Building 116
Undergraduate 408-924-4340
Graduate 408-924-4346
http://ad.sjsu.edu

Art History and Visual Culture

Professors

Anne Simonson

Associate Professors

Dore Bowen
Beverly Grindstaff

Assistant Professors

Anthony Raynsford

Fine Art Studio Program

Professors

Robert M. Chiarito
Reed Estabrook
Jo Farb Hernandez
Robin Lasser
Leroy Parker
Joel Slayton
Patrick Surgalski
Brian Taylor, Chair
Stanton Welsh

Associate Professors

Gale Antokal
Valerie Mendoza
Shannon Wright

Curricula

BA, Art, Concentration in Art History and Visual Culture
BA, Art, Concentration in Studio Practice
BA, Art, Concentration in Studio Practice, Preparation for Teaching
BFA, Art, Concentration in Digital Media Art
BFA, Art, Concentration in Photography
BFA, Art, Concentration in Pictorial Art
BFA, Art, Concentration in Spatial Art
Minor, Architectural Studies
Minor, Art Education
Minor, Art History and Visual Culture
Minor, Photography
Minor, Studio Art
MFA, Art, Concentration in Digital Media Art
MFA, Art, Concentration in Photography
MFA, Art, Concentration in Pictorial Arts
MFA, Art, Concentration in Spatial Arts
MA, Art, Concentration in Art Education
MA, Art, Concentration in Art History and Visual Culture

Introduction

San José State University is an accredited institutional member of the National Association of Schools of Art and Design. The time required to complete a degree varies with the different options; a full-time student should allow at least four years for the BA degree and at least four and one-half years for the BFA degree.

The Department of Art and Art History offers liberal arts and professional undergraduate studies in a wide variety of disciplines.

The undergraduate program in Art History and Visual Culture is designed to begin the preparation of professional college and university teachers, research personnel, museum curators, conservators and librarians.

The undergraduate Art Education Program is designed to provide practicing teachers with opportunities to work with university faculty and other art professionals in order to increase their skills and knowledge in both art and education.

The graduate programs in art are designed to increase the artistic growth of the candidate and to provide the basis for further study through two concentrations: Art Education, and Art History and Visual Culture.

The MA-Art, Concentration in Art History and Visual Culture is designed to prepare community college teachers, museum staff, and students pursuing Ph.D. degrees or independent scholarship.

The MFA-Art is a highly selective program that provides professional training and education for artists in Pictorial Arts (painting, drawing, printmaking), Spatial Arts (sculpture, ceramics, glass, metals, and performance installations), Photography, or Digital Media Art, and prepares artists and college and university teachers in these areas.

All programs are supported and enriched by a diverse schedule of exhibitions in the Natalie and James Thompson Gallery and eight student galleries as well as weekly public lectures. Exhibitions present contemporary and historical art, as well as work by faculty and students.

BA - Art, Concentration in Art History and Visual Culture

Program for students who wish a concentration in Art History and Visual Culture.

Semester Units

General Education Requirements 39
Of the 51 units required by the university, 12 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 6-10
Foreign Language (6-10 units), or complete six units in Art/Design Foundation Courses (ART 012, ART 013, ART 014, or ART 024 recommended) (6 units); SJSU Studies courses for GE Areas R and S (ANTH 160; CA 172; RELS 191, RTVF 110, URBP 101, or WOMS 101 strongly recommended) (6 units)

Courses in Support of the Major 6
Recommended courses are ANTH 160 (Area R), and CA 172, RELS 191, RTVF 110, URBP 101, or WOMS 101 (Area S) (6 units)

Requirements in the Major 48

Core Requirements 6
Complete two courses from: ARTH 070A, ARTH 070B, ARTH 070C

Upper Division Requirements 39
39 units including ARTH 101, ARTH 175; ARTH 193A or ARTH 193B and a minimum of 3 units from each of the following four groups with a minimum of 9 additional units selected from one of the groups. 3 units may be art studio or design.</cstyle:>

Group 1: ARTH 152, ARTH 191B, ARTH 193A, ARTH 193B, ARTH 194A, ARTH 194B, ARTH 195, ARTH 197A

Group 2: ARTH 182A, ARTH 183A, ARTH 183B, ARTH 185A, ARTH 185B, ARTH 186A, ARTH 186B

Group 3: ARTH 183C, ARTH 187A, ARTH 187B, ARTH 187C, ARTH 188A, ARTH 188B, ARTH 189A, ARTH 189B

Group 4: ARTH 110, ARTH 126, ARTH 160, ARTH 161, ARTH 162, ARTH 163, ARTH 176A, ARTH 176B, ARTH 182B, ARTH 190A, ARTH 190B, ARTH 190C, ARTH 191A, ARTH 192A, ARTH 192C

Capstone Course Requirement 3
Complete three units from: ARTH 198, ARTH 270, ARTH 271, ARTH 272, ARTH 273, ARTH 274, ARTH 275, ARTH 276, ARTH 277, ARTH 278, ARTH 279, ARTH 290, ARTH 295

Electives 15-19

Total Units Required 120

BA - Art, Concentration in Studio Practice

Program is for students who wish a general study of the visual arts or to combine studies in the visual arts with studies in other fields. The required studio work is intended to intensify awareness of visual art forms and introduce a variety of technical processes and theoretical approaches.

Semester Units

General Education Requirements 48
Of the 51 units required by the university, 3 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Areas of Emphasis 55-64

Photography Emphasis 64

Preparation for the Major 25
ART 001, ART 012, ART 013, ART 014, ART 024, ART 026 and ART 074 (19); ARTH 011 (3); ARTH 070A, ARTH 070B or ARTH 070C (3)

Requirements in the Major 39

Emphasis Requirements 18
PHOT 040, PHOT 110, PHOT 112, PHOT 120, PHOT 121 and PHOT 129

Upper Division Art History Requirements 6
ARTH 126 or PHOT 126, and three additional units of upper division art history.

Capstone Requirement 3
PHOT 197

Support for the Emphasis 12
Complete twelve units from: PHOT 113, PHOT 114, PHOT 115, PHOT 116, PHOT 122, PHOT 123, PHOT 125 (or other media related courses or a minor approved by a photo advisor)

Pictorial or Spatial Arts Emphasis 55

Preparation for the Major 25
ART 001, ART 012, ART 014, ART 024 and ART 074 (13); ART 013 (3); ART 025 or ART 026 (3); ARTH 011 (3); ARTH 070A, ARTH 070B or ARTH 070C (3)

Requirements in the Major 30

Pictorial or Spatial Arts Emphasis (Choose One) 15

Pictorial: Choose three to nine units from: ART 055, ART 061, ART 154, ART 158, ART 159, ART 162, ART 164, ART 166; Choose three to nine units from: ART 151, ART 152, ART 153, ART 155 (12 of the 15 units must be upper division)

Spatial: Complete fifteen units from: ART 042, ART 046, ART 047, ART 068, ART 132, ART 133, ART 134, ART 140, ART 143, ART 144, ART 147, ART 149, ART 154, ART 169, ART 171, ART 172, ART 173 (12 units must be upper division)

Upper Division Art History 6
PHIL 106 and ANTH 161

Capstone Requirement 3
ART 180 or ART 197

Related Art and Design Outside Area of Emphasis 6

Electives 6-15
May include a minor.

Total Units Required 120

BA - Art, Concentration in Studio Practice, Preparation for Teaching

This major is designed for students interested in teaching art in high school or middle school. The following course work satisfies San José State University's requirements for a BA in Art, Concentration in Studio Practice. This program is approved as subject matter preparation for a single subject credential in art by the California Commission on Teacher Credentialing (CCTC).

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 index) for information on application and admission to credential programs.

Note: Students who wish to complete or have completed another major should consult with an Art advisor who specializes in teacher preparation to determine requirements for single subject matter competency certification in art.

Semester Units

General Education Requirements 45
Of the 51 units required by the university, 6 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major and Supporting Courses 24
ART 012, ART 013, ART 024 and ART 046 (12); ART 025 or ART 026 (3); ARTH 070B (3); ARTH 070A or ARTH 070C (3); PHIL 066 or PHIL 106 (3)

Additional Preparation/Supporting Courses 6

3 units must be non-Western.</cstyle:>
Complete three units from: ARTH 190B, ARTH 191A (3); Complete three units from: ARTH 182A, ARTH 183A, ARTH 183B, ARTH 183C, ARTH 193A, ARTH 193B, ARTH 194A, ARTH 194B, ARTH 195, ARTH 197A (3)

Requirements in the Major 24

Core Requirements 18
ART 061, ART 138 and ART 139 (9); ART 074 or DSGD 083 (3); Complete six units from: ART 047, ART 068, ART 173, ARTH 072, ARTH 198, DSGD 104, PHOT 040 (6)

Emphasis (Depth) Requirements 6

Complete 6 units from one of the following six areas or in an approved design area.</cstyle:>

Ceramics: ART 132, ART 133, ART 134, ART 137

Crafts: ART 140, ART 143, ART 144, ART 147, ART 149, ART 154

Drawing/Painting: ART 154, ART 158, ART 159, ART 162, ART 166

Printmaking: ART 151, ART 152, ART 153, ART 155

Photography: PHOT 110, PHOT 112, PHOT 115

Sculpture: ART 133, ART 137, ART 149, ART 168, ART 170, ART 171

Capstone Requirement 4
ARED 150

Electives 15

Total Units Required 120

BFA - Art

The Bachelor of Fine Arts Program is for the student seriously interested in a career as a professional artist. It combines a general background in studio art with an intensive preparation in an area of specialization and is recommended preparation for the MFA degree.

Applicants must meet university requirements for admission and must first be admitted to one of the BA - Art Programs. In addition, they must meet the following departmental requirements:

1. Attain junior standing and have completed 16 prerequisite units of basic color, design, drawing and art history with a grade point average of 3.0 on a 4.0 scale. Also recommended are three additional units in drawing and three units from one of the studio concentration areas.

2. Pass the BFA - Art admissions review. During the review, which is held twice a year, slides and photographs 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. Portfolios are due approximately March 1, for admission the following fall, and by approximately October 10, for admission the following spring semester. Instructions are available in the Art Department office.

3. Maintain a 3.0 average on a 4.0 scale in all art/design courses; failing this, the BFA status will be changed to one of the BA - Art programs.

4. Complete the BFA - Art Program: In Art 199, BFA Project, the candidate will prepare an individual art exhibit which will demonstrate to the faculty of the School of Art and Design the candidate's professional competence in his or her area of concentration.

BFA - Art, Concentration in Digital Media Art

Semester Units

General Education Requirements 48
Of the 51 units required by the university, 3 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 22
ART 001, ART 012, ART 013 and ART 024 (10); ARTH 011 (3); ARTH 070A, ARTH 070B or ARTH 070C (3); ART 074 (3); PHOT 040 (3)

Requirements in the Major 63

Digital Media Art Concentration Requirements 27
ART 075, ART 101, ART 104 and ART 110 (12); Complete fifteen units from: ART 103, ART 105, ART 106, ART 107, ART 172, ART 175, ART 178, ART 180 (15)

Upper Division Art History Requirements 6
Two courses. Recommend: ARTH 191A.

Capstone Requirement 6
ART 198D and ART 199

Art and Design Electives 15
Art and Design and media-related electives and/or approved minor

Upper Division Support Courses 9
Courses in another department approved by advisor

Total Units Required 135

BFA - Art, Concentration in Photography

Semester Units

General Education Requirements 45
Of the 51 units required by the university, 6 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 22
ART 001, ART 012, ART 013, ART 024 and ART 074 (13); ART 014, ART 025 or ART 026 (3); ARTH 011 (3); ARTH 070A, ARTH 070B or ARTH 070C (3)

Requirements in the Major 63

Photography Concentration Requirements 30
PHOT 040, PHOT 110, PHOT 112, PHOT 120, PHOT 121, PHOT 129 and PHOT 197 (21); Complete nine units from: PHOT 113, PHOT 114, PHOT 115, PHOT 116, PHOT 122, PHOT 123, PHOT 125 (9)

Upper Division Art History Requirements 6
ARTH 126 or PHOT 126 (3); ARTH 190B or ARTH 191A recommended (3)

Art and Design Electives 21
21 units of art and design and media-related electives, and/or an approved minor.

Capstone Requirement 6
ART 198 and ART 199

Total Units Required 132

BFA - Art, Concentration in Pictorial Art

Semester Units

General Education Requirements 48
Of the 51 units required by the university, 3 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 25
ART 001, ART 012, ART 014 and ART 024 (10); ART 013 or ART 046 (3); ART 025 or ART 026 (3); ART 074 (3); ARTH 011 (3); ARTH 070A, ARTH 070B or ARTH 070C (3)

Requirements in the Major 57

Pictorial Art Concentration Requirements 15
ART 061 (3); Complete three units from: ART 151, ART 152, ART 153, ART 155 (3); Complete six units from: ART 055, ART 158, ART 159 (6); Complete three units from: ART 042, ART 046, ART 047, ART 068, ART 132, ART 134, ART 143, ART 144, ART 147, ART 149, ART 169, ART 171, ART 172, ART 173 (3)

Area Requirements (Choose One Area) 12
Area 1: Complete twelve units from: ART 164, ART 165, ART 166 (all Area 1 courses repeatable for credit)

Area 2: Complete twelve units from: ART 151, ART 152, ART 153, ART 154, ART 155

Upper Division Art History Requirements 6
Two courses. Recommended: ARTH 190B or ARTH 191A.

Art and Design Electives 18

Capstone Requirement 6
ART 198 and ART 199

Total Units Required 132

BFA - Art, Concentration in Spatial Art

Semester Units

General Education Requirements 45
Of the 51 units required by the university, 6 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 25
ART 001, ART 012, ART 013, ART 014, ART 024, ART 026 and ART 074 (19); ARTH 011 (3); ARTH 070A, ARTH 070B or ARTH 070C (3)

Requirements in the Major 60

Spatial Art Concentration Requirements 27
ART 068, ART 046 or ART 171 (6); ART 172 or ART 173 (3) 9

Area Requirements 9
Complete nine units from: ART 042, ART 046, ART 047, ART 132, ART 133, ART 140, ART 143, ART 144, ART 147, ART 149, ART 168, ART 169, ART 171, ART 172, ART 173

Additional Courses 9
Complete nine units from: ART 055, ART 061, ART 151, ART 152, ART 153, ART 154, ART 155, ART 158, ART 162, ART 164, ART 165, ART 166

Upper Division Art History Requirements 6
Recommended: ARTH 190B or ARTH 191A

Art and Design Electives 21

Capstone Requirement 6
ART 198 and ART 199

Total Units Required 132

Minor - Art Education

The minor in art education helps students obtain a supplementary authorization in art. This means that a holder of a multiple subjects or standard elementary credential may have art listed as a supplementary area of expertise on his or her credential. See art education advisor.

	Semester Units
Core Requirements	21
ART 012, ART 024, ART 046, ART 138 and ART 139 (15); ARED 150 (3); PHIL 066 or PHIL 106 (3)	
Upper Division Art History	3
Complete three units from: ARTH 182A, ARTH 183A, ARTH 183B, ARTH 183C, ARTH 193A, ARTH 193B, ARTH 194A, ARTH 194B, ARTH 195, ARTH 197A	
Total Units Required	24

Minor - Art History and Visual Culture

	Semester Units
Support for the Minor	6
Complete six units from: ARTH 070A, ARTH 070B, ARTH 070C	
Requirements for the Minor	12
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 JosÈ State University.	
Total Units Required	18

Minor - Architectural Studies

	Semester Units
Support for the Minor	9
MATH 019 or MATH 030 (3); PHYS 001 or PHYS 002A (3); ARTH 070A or ARTH 070B (3)	
Requirements of the Major	12
Art History Requirement	6
Complete six units from: ARTH 160, ARTH 161, ARTH 162, ARTH 163, ARTH 192C	
Interior Design Requirement	3
Complete three units from: DSIT 005, DSIT 010, DSIT 029, DSIT 034, DSIT 098, DSIT 103	
Art Requirement	3
3 units must include a second studio course, either from the Interior Design requirement or from the following.</cstyle:>	
ART 013, ART 024, ART 026, ART 068, ART 172, ART 173	
Total Units Required	21

Minor - Photography

	Semester Units
PHOT 040, PHOT 110, PHOT 112, PHOT 120 and PHOT 121 (15); Complete three units from: PHOT 113, PHOT 114, PHOT 115, PHOT 122, PHOT 123, PHOT 197 (3); Complete three units from: PHOT 126, PHOT 129 (3) (21)	
Total Units Required	21

Minor - Studio Art

	Semester Units
Support for the Minor	6
Lower division studio art courses	
Requirements for the Minor	12
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 JosÈ State University.	
Total Units Required	18

Graduate Programs

The Department of Art and Art History offers graduate work for qualified students who desire to earn one or more of the following:

1. The MA - Art, with concentrations in:

- Art History and Visual Culture
- Art Education (due to space limitation, the art education faculty is not accepting applications for the 2011-2012 academic years)

2. The MFA - Art, with concentrations in:

- Digital Media Art
- Photography
- Pictorial Arts including: Painting, Drawing and Printmaking
- Spatial Arts including: Ceramics, Glass, Installation, Performance, Sculpture

3. Single Subject Teaching Credential

Supervision of student teaching is done through this department and usually only within Santa Clara County. See the art education advisor.

MA - Art, Concentration in Art Education or Concentration in Art History and Visual Culture

Step I. Admission to MA - Classified Standing

Admission to any of these programs requires two steps:

In addition to the university requirements as outlined in this catalog, 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 must be in upper division art history courses. Courses in related academic areas will be assessed in reviewing qualifications of applicants.
- 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 be in art history of which 6 units are upper division courses and 3 units of Art 138, Studio Art Experiences for Young People, or equivalent.

Admission to Conditionally Classified Standing

Applicants who successfully complete the review, and who meet minimum requirements for admission to the Graduate Division, but who do not meet all other requirements, (i.e., lacking prerequisites or GPA) may be admitted to conditionally classified standing. They will be advanced to classified standing when the art graduate advisor certifies they have satisfied all appropriate requirements.

Step II. Candidacy for the MA - Art

Candidacy denotes that the student is fully qualified to complete the final stages of the MA - Art and is thus eligible to enroll in ART 297A, Master's Special Study, ART 297B, Master's Project, or ART 299, Master's Thesis. In order to attain candidacy, the student must meet the university requirements for admission to candidacy as outlined in this catalog. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape {http://www.sjsu.edu/gradstudies}.

- Secure commitment of three faculty members of the university, two of whom must be members of the art 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.

- Submit a proposed program conforming to university and school requirements. The proposed program must be approved by the art graduate committee and the University Graduate Studies 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 ART 299, Master's Thesis. Electives to complete the 30 units may be drawn from approved 100 and 200 level courses.

Additional information regarding advancement to candidacy is available in the Art Graduate Office.

Completing Requirements for the MA - Art

All students must meet university requirements for the master's degree as outlined in this catalog. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape {http://www.sjsu.edu/gradstudies}.

Area Requirements:

a. Art Education: Of the 30 units required, 21 must be in art courses and 9 units may be in related areas of study. The upper division writing requirement and EDLD 221, ART 260 and one seminar must be completed before candidacy may be granted. These courses may be included in the student's program unless they have been used to fulfill requirements for a teaching credential.

b. Art History and Visual Culture: 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 ART 299, Master's Thesis, will be contingent upon satisfactory completion of both language and comprehensive examinations.

Thesis Requirements:

1. Thesis: The thesis must meet university requirements as stipulated in this catalog. It will be written under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee.

2. Thesis Examination: The candidate for the MA - Art degree must successfully pass a final examination based on the thesis.

MA Art - Concentration in Art History and Visual Culture

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 prepares students for a graduate library degree with 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.

	Semester Units
Core Courses *Complete at least 15 units from:* ART 282A, ART 282B, ARTH 270, ARTH 271, ARTH 272, ARTH 273, ARTH 274, ARTH 275, ARTH 276, ARTH 277, ARTH 278, ARTH 279, ARTH 290, ARTH 291, ARTH 295 (ARTH courses are repeatable for credit when course content changes)	15
Upper-Division Electives Up to 12 units of departmental graduate advisor-approved 100-level electives. Six units may be taken from other departments with graduate advisor approval.	12
Thesis or Project ART 299 or ART 297A/B	3
Total Units Required	30

MFA - Art, Concentrations in Digital Media Art, Photography, Pictorial and Spatial Arts

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:

1. Demonstrated interest in the area of study by a professional portfolio. The equivalent of a BFA - Art from San José State University in the applicant's designated area of graduate emphasis, and including at least 6 upper division units in art history, is recommended.

2. Successful completion of the application procedure for the MFA Admission Review. During the MFA Admission Review, appropriate materials (slides, photographs, videotapes, CDs, etc.) 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 spring review and who meet minimum school and university requirements are admitted to classified standing for the following semester.

Applicants for the spring MFA Admission Review will be considered only if the review instructions have been carefully followed and all materials (including official transcripts) are supplied. Write or call the Art and Design Graduate Office, 408-924-4346, for details. The deadline is the first Friday in February.

Admission to Conditionally Classified Status

Applicants who pass the spring MFA Admission Review and meet minimum requirements for admission to the Graduate Division, but do not meet all requirements above, may be admitted to conditionally classified status. 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.

Step II. Admission to Candidacy for the MFA - Art

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 Special Study, and 298B, MFA Project. In order to attain candidacy, the student must meet the university requirements for admission to candidacy as outlined in this catalog. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluation website at www.sjsu.edu/gape {http://www.sjsu.edu/gradstudies}. In addition, the student must:

1. Pass the Pre-Thesis Review. This is an exhibition of original work scheduled each semester in one of the school's galleries. Students must obtain signatures of three faculty members willing to serve on their thesis committee, including at least one faculty member teaching in the designated area of emphasis, in order to apply to the Pre-Thesis Review. Passing the review is necessary before the student may enroll in their thesis project classes, ART 298 A-B.

2. Students must formalize their MFA project committee by obtaining the signatures of 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 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 taken.

3. The student must submit a proposed program conforming to university and school requirements on the "Departmental Request for Candidacy" form obtained from Graduate Admissions and Program Evaluations and filed according to university deadlines. The proposed program must be approved by the art graduate committee and the University Graduate Studies Committee before the student may be considered for the MFA - Art.

Additional information regarding advancement to candidacy is available in the Art Graduate Office.

Completing Requirements for the MFA - Art

1. General Requirements: The MFA - Art program requires a minimum of 60 units of approved art 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.

2. Required Courses: see below.

3. All students must meet the university's English writing requirement.

4. MFA - Art Project: The culmination of the program is the MFA - Art project which must demonstrate the professional level of the candidate's accomplishment. After admission to candidacy the 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 approval of the completed work, studio projects will be appropriately exhibited in accordance with departmental requirements.

All candidates must submit to the Department of Art and Art History a satisfactory report of the project, following the school's approved format. MFA project reports will document the creative project with color photos and must be accompanied by a set of color images which illustrate each work in the project. The project report and the slide record (in the case of studio projects), must be approved by the candidate's project committee and by the art graduate advisor before the degree may be awarded.

5. Final Examination: The candidate must successfully complete an oral examination based on the area of the MFA - Art project.

6. The application for graduation form must be filed with the university Graduate Studies and Research Office according to the posted deadline (in the semester prior to completing degree requirements).

MFA - Digital Media Art

	Semester Units
Graduate Seminars and Critiques in Area of Concentration ART 210	9
Graduate Tutorials in Area of Concentration ART 220	6
Seminars ART 281, ART 282A and ART 282B	9
Additional Course ART 174A, ART 201, ART 212 or ART 276	3
Upper Division Art History	6
Electives	21
Special Study ART 298A	3
Project ART 298B	3
Total Units Required	60

MFA - Photography

	Semester Units
Graduate Seminars and Critiques in Area of Concentration ART 208	15
Graduate Tutorials in Area of Concentration ART 222	6
Seminars ART 281, ART 282A and ART 282B	9
Additional Course ART 174A, ART 201, ART 212 or ART 276	3
Upper Division Art History	6
Electives	15
Special Study ART 298A	3
Project ART 298B	3
Total Units Required	60

MFA - Pictorial Art

	Semester Units
Graduate Seminars and Critiques in Area of Concentration ART 202 or ART 204	9
Graduate Tutorials in Area of Concentration ART 217	6
Seminars ART 281, ART 282A and ART 282B	9
Additional Course ART 174A, ART 201, ART 212 or ART 276	3
Upper Division Art History	6
Electives	21
Special Study ART 298A	3
Project ART 298B	3
Total Units Required	60

MFA - Spatial Art

	Semester Units
Graduate Seminars and Critiques in Area of Concentration ART 202 or ART 204	9
Graduate Tutorials in Area of Concentration ART 219	6
Seminars ART 281, ART 282A and ART 282B	9
Additional Course ART 174A, ART 201, ART 212 or ART 276	3
Upper Division Art History	6
Electives	21
Special Study ART 298A	3
Project ART 298B	3
Total Units Required	60

Asian Studies Program

College of Humanities and the Arts

Clark Hall 419
408-924-4465

Professors

Christian Jochim, Coordinator

Curricula

Minor, Asian Studies

Introduction

The interdepartmental Minor in Asian Studies permits students to concentrate their course work in one of the following areas: General Asian Studies, East Asia, South Asia, or Southeast Asia. For each area, students will study the cultural background (6-9 units), social sciences (6-9 units), and language (3-6 units).

The Asian Studies minor will acquaint students with the histories, traditional cultures and contemporary conditions of Asian countries and societies. Courses may be selected from anthropology, art, foreign languages, geography, history, music, philosophy, political science, religious studies and business.

Minor - Asian Studies

Semester Units

Group A 6-9

Select 6-9 units from at least two of the following.</cstyle:>

Complete six to nine units from: ARTH 070C, ARTH 193B, ARTH 194A, ARTH 194B, ARTH 195, CHIN 102, CHIN 140, HUM 114, JPN 102, LING 122, MUSC 019, MUSC 148B, MUSC 148C, PHIL 104, RELS 070B, RELS 142, RELS 143, RELS 144

Group B 6-9

Select 6-9 units from at least two of the following.</cstyle:>

Complete six to nine units from: ANTH 115, ANTH 177, BUS 133B, GEOG 160, HIST 107, HIST 109A, HIST 109B, HIST 110B, HIST 110A, POLS 145

Group C 3-6

Three to six units in a foreign language related to one's chosen area, such as Chinese, Japanese, Punjabi, or Vietnamese.

Total Units Required 18

Athletics (Intercollegiate)

Alan B. Simpkins Intercollegiate Athletics Administration Building (7th & Alma)
408-924-1200 (Voice)
408-924-1291 (Fax)

Professors

Billy J. Campsey, NCAA Faculty Representative

Athletics Staff

Augie Argabright, Head Coach, Men's and Women's Cross Country
Michael Beaubien, Co-Ticket Manager
Thomas Bowen, Director of Athletics
Jeb Burns, Associate Head Athletic Trainer
Tatum Carroll, Assistant Athletic Trainer
Mike Chisholm, Director of Broadcasting
Darren Coelho, Co-Ticket Manager
Oscar Crespo, Head Coach, Volleyball
Eileen Daley, Assistant Athletic Director Academic Services
Pam De Costa, Head Coach, Women's Basketball
John Dormann, Head Coach, Women's Golf
Kellie Elliott, Deputy Director of Athletics
Lawrence Fan, Sports Information Director
Taylor Hanohano, Director of Equipment Services
Tom Hastings, Associate Athletic Director, Communications
Chris Holder, Director of Strength, Conditioning and Athletic Performance
Sage Hopkins, Head Coach, Swimming/Diving
Cindy Kato, Director of Student Success Services
John Kennaday, Head Coach, Men's Golf
Tiffany Lofton, Major Gifts Officer
Erika Mares, Assistant Athletic Director, Program Advancement and Branding Affairs
Stacy Martin, Associate Athletic Director, Business Operations
Ken McDonald, Assistant Athletic Director, Spartan Foundation Executive Director
George Nessman, Head Coach, Men's Basketball
Anh-Dao Nguyen, Head Coach, Tennis
Doug Osumi, Video Coordinator
Vince Otoupal, Senior Associate Athletic Director
DeCosta Pam, Head Coach, Women's Basketball
Lydia Panayotidis, Marketing Coordinator
Sam Piraro, Head Coach, Baseball
Scott Shaw, Head Athletic Trainer
David Siracusa, Head Coach, Women's Soccer
Gary St. Clair, Head Coach, Men's Soccer
Etienne Thomas, Associate Athletic Director/Director of Compliance
Dick Tomey, Head Coach, Football
Lou Tully, Head Coach, Water Polo
Peter Turner, Head Coach, Softball
Amy Villa, Associate Sports Information Director
Wayne Wright, Head Coach, Gymnastics

Introduction

Intercollegiate athletics offers a comprehensive spectrum of 16 sports (6 men's and 10 women's) that compete at the NCAA Division I level - the highest level of collegiate competition. Football competes as an NCAA Division I-A member, an even more exclusive level in intercollegiate athletics. San José State University is a member of the 9 team school Western Athletic Conference. Over the years, San José State University athletic 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 athletic experiences.

Aviation

College of Engineering

Industrial Studies Building - IS 111
408-924-3190 (Voice)
408-924-3198 (Fax)
avtech@sjsu.edu
www.engr.sjsu.edu/avtech

Professors

Seth Bates, Chair

Assistant Professors

Seebany Datta-Barua
Wenben Wei

Curricula

BS, Aviation
Minor, Aviation

Introduction

The curricula for the BS - Aviation have been designed to prepare graduates for a wide range of positions in the aviation industry. Students receive instruction in the fundamentals of aviation along with mathematics, science and general courses especially chosen for their applicability to the aviation field.

Aviation graduates are employed in such positions as flight, airport management, purchasing, marketing, quality control, aviation management, technical management and military aviation. The curriculum provides an excellent background for the professional pilot

There are four options under the BS in Aviation: Operations, Aviation Management, Avionics, and Maintenance Management. The Maintenance Management option is designed to complement an AS-level Federal Aviation Administration FAA part 147 program from a local community college. The Aviation program is designed to provide students with an opportunity to develop in-depth knowledge and hands-on experience in basic and advanced aviation principles and procedures. Students in the BS in Aviation will:

1. Understand the attributes and behavior of an aviation professional.

2. Learn about aircraft design, performance, operating characteristics, and maintenance.

3. Understand the importance of aviation safety and human factors.

4. Demonstrate familiarity with legal and labor issues in national and international aviation.

5. Learn about the roles and functions of airports, airspace, and air traffic control.

6. Apply meteorology and environmental issues to aviation.

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

Advisement

Due to the intricacy of the curricula and the critical nature of prerequisites and related course sequencing, each aviation major is assigned to a faculty advisor.

For those students who undertake a portion of their program elsewhere, the proper articulation with San José State University may be assured by continued communication with department advisors. Students in the Maintenance Management option should consult with their department advisor for the complete list of articulated community college FAA Part 147 Programs.

All College of Engineering undergraduate majors are required to maintain a Major GPA of 2.0 or above. Major GPA includes all courses required for the major, including math, science and engineering.

Curriculum Requirements

Major forms must be submitted and approved three semesters prior to graduation. Students may challenge aviation courses based on prior experience via the credit-by-examination procedure. All prerequisite requirements must be completed prior to enrolling in courses under the credit-by-examination procedure.

Units required for the aviation degree are 132. Students who are not adequately prepared in high school or who take non-approved elective courses may require additional units. To qualify for graduation, students must achieve a minimum 2.0 average in aviation course work taken at San José State University and a 2.0 average in all course work taken at San José State University and elsewhere that is being counted toward the major. A grade of "C-" or better is required for all courses being used to satisfy any major or minor offered by the Department of Aviation, including preparation courses.

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 for a one unit course, Aviation 180H Individual Studies, for two semesters. This individual studies course is specifically structured for honors students. Students who successfully complete the two, one-unit honors courses, and who maintain the required 3.5 grade point average, will qualify for the award of departmental honors at graduation.

BS - Aviation

The curriculum provides a four-year pattern of course work for those interested in the several different aspects of aviation. Upon completion of the required course work in general education, aviation, science and business, the student has the opportunity to choose one of four options - Operations, Aviation Management, Avionics, or Maintenance Management.

Semester Units

General Education Requirements 27
Of the 51 units required by the university, 24 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 26
CHEM 001A, PHYS 002A, PHYS 002B and MATH 071 (16); BUS 020 or BUS 020N (3); BUS 090 and ECON 001B (6)

Required for the Major 75

Core 27
AVIA 078, AVIA 128, AVIA 141, AVIA 173, AVIA 190, BUS 140, BUS 186, TECH 198 and ENGR 100W

Options 48

Choose one of the following options.</cstyle:>

Operations: AVIA 002, AVIA 031, AVIA 042, AVIA 043, AVIA 068, AVIA 073, AVIA 091, AVIA 176, AVIA 177, AVIA 178, AVIA 192, AVIA 193, AVIA 194, BUS 142, BUS 149, BUS 170, METR 110 51

Aviation Management: AVIA 002, AVIA 031, AVIA 042, AVIA 043, AVIA 073, AVIA 176, AVIA 177, AVIA 178, AVIA 179, BUS 130, BUS 146, BUS 150, BUS 151, BUS 167, BUS 170, URBP 103, URBP 136 51

Avionics: TECH 020, TECH 060, TECH 062, TECH 063, TECH 160, TECH 162, TECH 163, TECH 167, AVIA 002, AVIA 031, AVIA 042, AVIA 043, AVIA 068, AVIA 168, AVIA 169 and AVIA 193, CS 049C or CMPE 046 (3) 47

Maintenance Management: In order to complete this option, a student must complete one of the AS-level programs at a local community college. and

Community College Programs 30

College of San Mateo
Aircraft Maintenance Technology -or- Airframe and Power Plant Technology

College of Alameda
Aviation Maintenance Technology

City College of San Francisco
Aircraft Maintenance Technology

Gavilan College
Aviation Maintenance Technology

Chaffey College
Aeronautics

Long Beach City College
Aviation Maintenance

Mount San Antonio College
Airframe and Aircraft Powerplant Maintenance Technology

Orange Coast College
Airframe and Powerplant Technology

San Bernardino Valley College
Maintenance and Powerplant

San Diego Miramar College
Aviation Maintenance Technology - Airframe and Powerplant

West Los Angeles College
Aviation Maintenance Technician

Courses Taken at SJSU 18
AVIA 176, AVIA 177, BUS 141, BUS 142, TECH 145 and ISE 155

Electives 2

Total Units Required 132

Minor - Aviation

A minor in aviation 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.

Behavioral Sciences Program

College of Social Sciences

Clark Hall 469
408-924-5340

Curricula

BA, Behavioral Science

Introduction

The Behavioral Science Program is designed for students who wish to develop an interdisciplinary perspective on human behavior. This perspective allows them to understand the psychological, social and cultural dimensions to being human in a complex society. Students develop broad skills in collecting data, logically and consistently analyzing data, communicating clearly, and problem solving. The program is offered cooperatively by the Departments of Anthropology, Psychology and Sociology, although the Department of Anthropology performs all academic advising. The knowledge and skills Behavioral Science students learn help prepare them for a variety of jobs that require using social science data and working with other people. Many students use a Behavioral Science major as preparation for graduate work in health care, social work, human resources, and other professions. Students majoring in Behavioral Science may also fulfill the requirements of the Behavioral Science/Anthropology, Behavioral Science/Psychology and Behavioral Science/Sociology double majors. This option is recommended for students who anticipate continuing their education beyond the undergraduate degree.

The Department of Anthropology provides all academic advising for the Behavioral Science Program, including advising for the three double majors. Students are encouraged to call the Behavioral Science Information Line, 408-924-5340, with any questions about the program, including the availability of advisors.

Behavioral Science will not accept students to the three Double Major programs in 2012. Please contact the Department of Anthropology for information on subsequent years.

BA - Behavioral Science (Interdepartmental)

Semester Units

General Education Requirements 45
Of the 51 units required by the university, 6 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Requirements in the Regular Major 48

Core Requirements 15
ANTH 011, PSYC 001, SOCI 001 and ANTH 193 (12); STAT 095, SOCI 015 or SOCI 102 (3)

Anthropology 9
Three courses (at least 2 upper division), which may include ANTH 149 or ANTH 165

Psychology 9
Three courses in psychology (at least 2 upper division), which may include PSYC 018 or PSYC 120

Sociology 9
SOCI 101 (3); Two additional upper division sociology courses, which may include SOCI 104 (6)

Emphasis 6
Two additional upper division anthropology, psychology, or sociology courses approved by Behavioral Science advisor

Electives 25

Total Units Required 120

UNVS 015C may be used in lieu of the statistics course required by this major through the Summer 2014.

Note: Students must complete at least one of the following courses: ANTH 149, ANTH 165, PSYC 018, PSYCH 120, or SOCI 104. A 3-unit maximum of individual studies may be used to meet the degree requirements. Three units of SJSU Studies coursework may be used to meet the major Emphasis requirement.

Biological Sciences Department

College of Science

Duncan Hall 254
408-924-4900

Professors

John T. Boothby
Shannon M. Bros
David K. Bruck
Robert G. Fowler
Daniel C. Holley
Jeffrey Y. Honda
Joanne T. Kerr
William Murray
Michael G. Sneary, Chair
Julio G. Soto
Sally Veregge
Steven J. White

Associate Professors

Tzvia Abramson
Susan Lambrecht
Elizabeth M. McGee
Leslee Parr
Sabine A. Rech
Jerry J. Smith

Assistant Professors

Shelley Cargill
Cleber Ouverney
Nishanta Rajakaruna
Scott Shaffer
Miri Van Hoven
J. Brandon White

Curricula

BA, Biological Science

BS, Biological Science, Concentration in Conservation and Organismal Biology

BS, Biological Science, Concentration in Marine Biology

BS, Biological Science, Concentration in Microbiology

BS, Biological Science, Concentration in Molecular Biology

BS, Biological Science, Concentration in Systems Physiology

BA, Biological Science, Preparation for Teaching

BA, Life Science, Preparation for Teaching

BA, Life Science, Concentration in Biodiversity Stewardship

Minor, Biological Science

Minor, Biological Science, Preparation for Teaching

Minor, Science

MA, Biological Sciences

MS, Biological Sciences, Concentration in Organismal Biology, Conservation and Ecology

MS, Biological Sciences, Concentration in Physiology

MS, Biological Sciences, Concentration in Molecular Biology and Microbiology

Introduction

An undergraduate degree in biology prepares students for graduate work, for laboratory and field research and technical work, for health professions, and for K-12 teaching. Graduate students prepare for careers in specialized scientific areas and community college teaching. Biology faculty pay special attention to students' ability to write and speak effectively, and to cooperate with the linguistically, culturally and ethnically diverse populations in the San José region. In addition, the department offers an unusually strong program in basic computer skills and statistics. All programs require strong support in chemistry, physics, mathematics and communication courses. These skills combined with a working knowledge of the biological sciences also make this degree attractive to those students who seek a strong college education but do not plan on a career as a biologist. In particular, familiarity with health and environmental issues are an asset to those seeking employment in many Bay Area companies and governmental agencies.

The department offers a wide range of concentrations, with strengths in molecular biology, microbiology, physiology, conservation biology and ecology. These concentrations prepare students for careers ranging from biotechnology to health care to field biology. In recent years the department has enhanced its faculty, infrastructure and instrumentation to expand its laboratory offerings in molecular biology, immunology and microbiology. The department is housed in Duncan Hall, a seven-story building, equipped with a variety of specialized classroom and research laboratories, extensive plant and animal collections, and controlled environment rooms. Space is allocated for an undergraduate Biology Students Association. Other departmental student clubs meet regularly. There are ten to fifteen competitive departmental scholarships for students who have been enrolled for one semester or more. A successful application is based upon academic performance. An equal number of fellowships provide additional funds to support graduate student research projects. Selection is based upon a well-written research proposal including a budget and the support of the student's faculty advisor. Although the department is large, our faculty and staff genuinely care about students and their success. Students will find a personal and friendly environment.

Bachelors Degrees

The Bachelor of Arts degree (BA) can be tailored through electives to meet virtually any career goal. It is a broad introduction to all of the life sciences. There is a special emphasis within the BA for students who want to become high school science teachers (BA-Biological Science-Preparation for Teaching). Two degrees are offered under the title of BA-Life Science. One, the BA-Life Science, Preparation for Teaching is designed for students interested in teaching in elementary and middle school. The second, BA-Life Science, Concentration in Biodiversity Stewardship is designed for those students seeking a broad-based curriculum in conservation.

The Bachelor of Science (BS) concentrations are technically more demanding, with more courses required in the lab or in the field. The BS is recommended for students who are sure of their career goals. New students are encouraged to begin in the BA and to discuss career plans with faculty advisors. There are no restrictions on changing degrees within those offered by the department (nor are any restrictions expected). The marine biology concentration requires at least one semester in residence at Moss Landing Marine Laboratories, usually in the junior or senior year. Many students seek careers in health care. This traditionally includes medicine, veterinary medicine or dentistry. In recent years, however, job opportunities have increased with more graduates entering osteopathy, optometry, physical therapy, podiatry, pharmacy and physician's assistant programs. Other popular career choices for undergraduates are entry-level technical and research jobs in biotechnology and the pharmaceutical industry. Students with an interest in environmental issues, including marine biology, botany, entomology, zoology and conservation biology often seek careers in state and federal wildlife agencies and in environmental consulting. Those students interested in health care issues and research, may specialize in microbiology, molecular biology and systems physiology. The department's upper division lab experiences are rigorous. Faculty have found that a strong performance in these course is a good predictor for acceptance into professional health schools, PhD and graduate programs, teaching, industry and government research.

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 Biological Sciences, including support courses.

Masters Degrees

The department offers the Master of Arts (MA) and the Master of Science (MS) degrees, with emphases in the specialty areas of the department. The MA culminates in written and oral examinations based upon 30 units of course work. At the graduate level, the MA - Natural Science offers science teachers an opportunity to study a subject in depth; and to enhance their teaching skills. The MS requires both course work and an intensive research project directed by three scientists, at least two of whom are SJSU faculty. In addition, the department has a program for those students interested in Clinical Laboratory Science. These students enter the MA program and are prepared for the state examinations to confer licensure as a Clinical Laboratory Scientist (Medical Technology). Acceptance to department graduate programs is by contact with individual faculty, who agree to serve as academic advisors. Contact the department graduate coordinator for additional information and the names and research interests of faculty.

International Programs

There are courses of study related to this department's curricula at the Overseas Study Centers of the CSU International Programs. See index.

Honors Program

Students may apply for the honors program in Biology in BS - Biological Sciences, Concentration in Systems Physiology.

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 Biology, Botany, or Zoology 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.

BA - Biological Science

Semester Units

General Education Requirements 39
Of the 51 units required by the university, 12 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 43
CHEM 001A and CHEM 001B (10); CHEM 008 and CHEM 009 (4); CHEM 135 (4); PHYS 002A and PHYS 002B (8); BIOL 005 and BIOL 155 (6); BIOL 100W (3); Science and/or teacher education electives chosen with prior advisor approval (8)

Requirements in the Major 36
BIOL 001A, BIOL 001B, BIOL 004 and BIOL 115 (14.5); BIOL 116, BIOL 117 or BIOL 118 (3); BIOL 144 (0.5); BIOL 160 or BOT 160 (4); MICR 101 (4)
30

BIOL 124 and BIOL 126 (4) or BIOL 106 and BIOL 106L (4)

Upper division biology electives chosen with prior advisor approval
6

Total Units Required 120

*Note: BIOL 001, BIOL 002 and BIOL 003 will be accepted in lieu of BIOL 001A and BIOL 001B if taken in the 2010-11 academic year.

BA - Biological Science, Preparation for Teaching

This major is designed for students interested in teaching science in high school or middle school. The following course work satisfies San José State University's requirements for a BA in Biological Sciences. In addition, this program is approved by the California Commission on Teacher Credentialing (CCTC) as subject matter preparation for a single subject credential in science with a biological sciences concentration.

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 index) for information on application and admission to credential programs.

Semester Units

General Education Requirements 36
Of the 51 units required by the university, 15 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major and Supporting Courses 43
CHEM 001A, CHEM 001B and CHEM 008 (13); PHYS 002A and PHYS 002B (8); BIOL 005, BIOL 155 and BIOL 100W (9); GEOL 103 (3); GEOL 001, GEOL 105, METR 112 or ASTR 101 (3); SCI 110 and SCED 175 (4); PHIL 133 (3)

Requirements in the Major 38-39

Botany 102 may satisfy only one requirement.</cstyle:>
BIOL 001A, BIOL 001B, BIOL 004, BIOL 115 and BIOL 144 (15); BIOL 160 and MICR 101 (8); BOT 102, BOT 103, BOT 105 or BOT 165 (4); ZOOL 115 or ENT 101 (4); ZOOL 116 or ZOOL 160 (3-4); BIOL 124 and BIOL 126 or BOT 102 (4)

Electives 0-1

Total Units Required 120

*Note: BIOL 001, BIOL 002 and BIOL 003 will be accepted in lieu of BIOL 001A and BIOL 001B if taken in the 2010-11 academic year.

BA - Life Science, Preparation for Teaching

This major is designed for students interested in teaching in elementary school or middle school. The following course work satisfies San Jose State University's requirements for a BA in Life Science. In addition, this program is approved by the California Commission on Teacher Credentialing (CCTC) as subject matter preparation for diversified subject matter preparation.

Maintaining 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 index) for information on application and admission to credential programs.

Semester Units

General Education Requirements 12-15
Of the 51 units required by the university, 36-39 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Requirements in the Major 76-85

Reading, Language and Literature 18-21
ENGL 001A, ENGL 001B and ENGL 112A (9); ENGL 103 or LING 107 (3); LING 108, COMM 045 and EDEL 108E or CHAD 150 and CHAD 151 (6-9)

History and Social Science 15
AAS 033A and AAS 033B or HIST 015A and HIST 015B (6); GEOG 137, GEOG 138 and GEOG 139 (9)

Mathematics 9
MATH 012, MATH 105 and MATH 106

Science 19
CHEM 030A, CHEM 030B, PHYS 001, PHYS 001L, BIOL 021, GEOL 103 and SCI 110

Visual and Performing Arts 9
CA 177 (3); Complete two courses from: ART 039, ART 138, DANC 148, MUSC 010B, MUSC 185A, TA 131 (6)

Physical Education and Health 3-6
KIN 177 and EDTE 190 or CHAD 149

Human Development 3-6
PSYC 082 and CHAD 067 or CHAD 060

Natural Science Concentration 25
BIOL 004, BIOL 005, BIOL 020, BIOL 066, BIOL 100W, BIOL 104A, BIOL 104B, BIOL 144, GEOL 105 and SCED 175

Electives 0-5

Total Units Required 120

BA - Life Science, Concentration in Biodiversity Stewardship

Semester Units

General Education Requirements 33-36
Of the 51 units required by the university, 15-18 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 33-38
PHYS 001, PHYS 001L and GEOL 107 or PHYS 002A and PHYS 002B (7-8); GEOL 103, GEOL 105 or ENVS 111 (3); METR 010 or METR 112 (3); CHEM 001A or CHEM 030A and CHEM 030B (5-6); AFAM 151, AMS 159 or PHIL 126 (3); COMM 120P, COMM 146F, ENGL 106 or ENGL 107 (3-4), *Complete two additional courses from:* AFAM 151, AMS 159, ANTH 176, BUS 167, COMM 120P, COMM 146F, ECON 107, ENGL 106, ENGL 107, ENVS 110, ENVS 117, ENVS 121, ENVS 124, ENVS 185, ENVS 187, GEOG 130, PHIL 126, HRTM 157

Requirements in the Major 42-43
BIOL 001A and BIOL 001B (10); BIOL 004 and BIOL 144 (1); BIOL 005, BIOL 006 and BIOL 100W (7); BIOL 155 or BIOL 156 (3); BIOL 160 and BIOL 163 (7); BOT 104 or BOT 165 (4); ZOOL 115, ZOOL 116 or ENT 101 (4); BIOL 164, BIOL 172 or ZOOL 150 (3-4); BIOL 186 or BIOL 190 (3)

Electives 1-10
Upper division non-GE BIOL, BOT, ENT, ZOOL, or other advisor approved electives (*)

Total Units Required 120

*Must be selected with prior advisor approval and note that AMS 159 can also be counted as SJSU Studies (Area V) .

BS - Biological Science, Concentration in Conservation and Organismal Biology

Semester Units

General Education Requirements 39
Of the 51 units required by the university, 12 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 26
CHEM 001A and CHEM 001B (10); CHEM 008 (3); PHYS 002A (4); BIOL 005 and BIOL 156 (or BIOL 155 with advisor approval) (6); BIOL 100W (3)

Requirements in the Major 53

Core 47
BIOL 001A, BIOL 001B, BIOL 004, BIOL 115, BIOL 118 (or BIOL 116 with advisor approval) and BIOL 144 (18); BIOL 111 and BIOL 113 (6); BIOL 160 or BOT 160 (4); BIOL 106 and BIOL 106L (4); BOT 165 (4); ENT 101 (4); ZOOL 115 or ZOOL 116 (4); BIOL 163 (3)

Electives 6
Select from the classes below to include 6 additional elective units.</cstyle:>
BIOL 172 (4), BOT 104 (4), ENT 106 (3), GEOL 137 (4), ZOOL 116 (4), ZOOL 150 (4)

Total Units Required 120

*Note: BIOL 001, BIOL 002 and BIOL 003 will be accepted in lieu of BIOL 001A and BIOL 001B if taken in the 2010-11 academic year.

Students must obtain a prior advisor approval for electives and for choice of courses within categories. Some courses may not count both in the core of the major and in the emphasis; see program advisor.

BS - Biological Science, Concentration in Marine Biology

Semester Units

General Education Requirements 39
Of the 51 units required by the university, 12 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 38-39
CHEM 001A and CHEM 001B (10); CHEM 008, CHEM 009 and CHEM 132 (8); PHYS 002A and PHYS 002B (8); BIOL 005 (3); BIOL 155 or MS 104 (3-4); BIOL 156 (3); BIOL 100W (3)

Requirements in the Major 44
BIOL 001A, BIOL 001B and BIOL 004 (10.5); BIOL 115 and BIOL 160 (8); BIOL 124 and BIOL 125 (5); MICR 101 (4); BIOL 144 (0.5); MS 103 and MS 144 (8); Complete two courses from: ZOOL 115, ZOOL 116, MS 112, MS 113, MS 124, MS 131 (8)

Total Units Required 123-124

*BOT 102 or BIOL 124 and BIOL 126 (4 units) may be substituted for BIOL 125 (5 units).

**Note: BIOL 001, BIOL 002 and BIOL 003 will be accepted in lieu of BIOL 001A and BIOL 001B if taken in the 2010-11 academic year.

BS - Biological Science, Concentration in Microbiology

Semester Units

General Education Requirements 39
Of the 51 units required by the university, 12 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 17
PHYS 002A and PHYS 002B (8); MATH 030 (MATH 030P or MATH 060 also acceptable) (3); BIOL 100W (3); BIOL 005 (3)

Requirements in the Major 47
BIOL 001A, BIOL 001B and BIOL 004 (10.5); BIOL 107, BIOL 115 and BIOL 144 (7.5); MICR 101, MICR 127 and MICR 141 (9); Complete at least 7 units of laboratory courses from: BIOL 107L, MICR 122L, MICR 123L, MICR 127L, MICR 140L, MICR 141L, MICR 142L (7); Complete 13 additional units from lab courses (above) or: BIOL 116, BIOL 118, BIOL 121, BIOL 124, BIOL 125, BIOL 126, BIOL 134, BIOL 135, BIOL 135L, BIOL 155 or BIOL 156, CHEM 055, MICR 122, MICR 123, MICR 140, MICR 142, MICR 170 (or other courses by prior advisor approval) (13)

Requirements in the Minor 23
CHEM 001A, CHEM 001B, CHEM 112A, CHEM 112B, CHEM 113A, CHEM 120S and CHEM 135

Total Units Required 128

*Note: BIOL 001, BIOL 002 and BIOL 003 will be accepted in lieu of BIOL 001A and BIOL 001B if taken in the 2010-11 academic year.

Students pursuing the California State Clinical Laboratory Science license should consult an advisor for additional requirements.

BS - Biological Science, Concentration in Molecular Biology

Semester Units

General Education Requirements 39
Of the 51 units required by the university, 12 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 20
PHYS 002A and PHYS 002B (8); MATH 030 (MATH 030P or MATH 060 also acceptable) (3); BIOL 005 and BIOL 155 (6); BIOL 100W (3)

Requirements in the Major 40
BIOL 001A, BIOL 001B, BIOL 004, BIOL 115, BIOL 116, BIOL 116L, BIOL 135, BIOL 135L and BIOL 144 (26); Complete two units from: BIOL 107L, BIOL 125, BIOL 180, BIOL 205, MICR 101 (2); Complete twelve units from: BIOL 105, BIOL 107, BIOL 117, BIOL 124, BIOL 137, MICR 101, MICR 170, or other courses with prior advisor approval (at least 8 elective units must be in Biological Sciences) (12)

Requirements in the Minor 23
CHEM 001A, CHEM 001B, CHEM 112A, CHEM 112B, CHEM 113A, CHEM 120S and CHEM 135

Total Units Required 124

*Note: BIOL 001, BIOL 002 and BIOL 003 will be accepted in lieu of BIOL 001A and BIOL 001B if taken in the 2010-11 academic year.

BS - Biological Science, Concentration in Systems Physiology

Semester Units

General Education Requirements 39
Of the 51 units required by the university, 12 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 22
PHYS 002A and PHYS 002B (8); MATH 060 or other calculus (5); BIOL 005 and BIOL 155 (6); BIOL 100W (3)

Requirements in the Major 43
BIOL 001A, BIOL 001B, BIOL 004, BIOL 115, BIOL 124, BIOL 125, BIOL 131, BIOL 135, BIOL 136 and BIOL 144 (29); MICR 101 (4); Complete three courses from: BIOL 105, BIOL 107, BIOL 107L, BIOL 135L, BIOL 137 (and if necessary to reach 10 units, other courses with prior advisor consent; CHEM 055 recommended) (10)

Requirements in the Minor 23
CHEM 001A, CHEM 001B, CHEM 112A, CHEM 112B, CHEM 113A, CHEM 120S and CHEM 135

Total Units Required 129

*Note: BIOL 001, BIOL 002 and BIOL 003 will be accepted in lieu of BIOL 001A and BIOL 001B if taken in the 2010-11 academic year.

Minor - Biological Science

Minors that total 18 units can be developed to fit the needs of the individual student. All minors require BIOL 20 and BIOL 21 or BIOL 1 and BIOL 2 or equivalent, plus ten to twelve (10-12) additional units in biological sciences courses of which six (6) units must be upper division. At least six (6) units, selected in consultation with the Biological Sciences Department advisor for minors, must be taken at San José State University. Environmental Studies students should consult a Biology Advisor.

Minor - Biological Science, Preparation for Teaching

	Semester Units
Lower Division	12
BIOL 001, BIOL 002 and BIOL 003	
Upper Division	8
Upper division biology courses acceptable towards a biology major	
Total Units Required	20

Minor - Science

The science minor does not qualify for a science teaching minor. See the Science Education Program advisor for the supplementary science credential requirements. This minor is not open to majors in College of Science, except mathematics and computer science.

	Semester Units
Prerequisite	6
General Education requirements in science at San JosÈ State University	
Additional Courses	16
Select at least 3 units per category; complete at least one of each category.</ cstyle:>	
Biological Science: Complete one of: BIOL 054, BIOL 101, BIOL 104A, BIOL 104B, BIOL 110, ENT 101	
Physical Science: Complete one of: CHEM 001A, CHEM 008, CHEM 030B, PHYS 001, PHYS 001L, PHYS 002A, PHYS 002B	
Earth Science: Complete one of: ASTR 101, ASTR 102, GEOL 001, GEOL 006, GEOL 111, METR 110, METR 112	
Total Units Required	22

For all courses for the minor, the instructor may accept related course work or experimental learning in lieu of stated prerequisites.

Completing Requirements for the MA/MS - Biological Sciences

Graduate Coordinator: Dr. Daniel Holley

Requirements for Admission to Classified Standing and Candidacy

Minimum requirements for admission to the Graduate Division, including satisfactory completion of the Graduate English Writing Requirements, are outlined in this catalog. To be admitted to classified graduate status, the student ordinarily will have an undergraduate degree in biological sciences or its equivalent, and will have achieved not less than a 3.0 grade point average. Applicants are expected to present an expanded statement of purpose, two letters of recommendation and Graduate Record Examination scores (if available) to the Department Graduate Coordinator. These materials will be added to Graduate Standing Summaries and transcripts and will be evaluated by faculty committees once each semester. Admission to candidacy follows admission to classified standing. Minimum university requirements are listed in this catalog. 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 “Competency in Written English” for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape.

Foreign students from countries where English is not the language of instruction throughout the educational system must meet the following requirements: a score of 610 or better on the T.O.E.F.L. (no waivers permitted) and at least a score of 400 (40%) on the verbal section of the G.R.E. (Graduate Record Examination).

Completing Requirements for the MA - Biological Sciences

See the introduction to department graduate programs for policies governing admission to classified standing for all master’s programs in biology. All students, in consultation with their graduate faculty advisor and committee members, must prepare a master’s degree program for approval by the Department Graduate Coordinator and the Associate Vice President for Graduate Studies and Research.

MA - Biological Sciences

Students in this degree program emphasize areas of General Biology, Microbiology, Molecular Biology or Physiology through choice of advisor, committee, course work and examination.

	Semester Units
Graduate Courses in Biology	5-7
BIOL 201, BIOL 202 and BIOL 284	
Additional Graduate Course	1-4
Any approved 255 course (any department prefix or suffix)	
Electives	19-24
100- or 200-level courses chosen with advisor consent	
Total Units Required	30

All students must demonstrate competency in written English. Final written and oral examination must be completed.

MS - Biological Sciences

All students in the MS Biological Sciences Program are required to choose a concentration. There are currently three concentrations available: (1) Organismal Biology, Conservation and Ecology, (2) Physiology, (3) Molecular Biology and Microbiology.

MS - Biological Sciences, Concentration in Organismal Biology, Conservation and Ecology

Completing Requirements for the MS - Biological Sciences, Concentration in Organismal Biology, Conservation and Ecology

See the introduction to department graduate programs for policies governing admission to classified standing for all master's programs in biology. All students, in consultation with their graduate faculty advisor and committee members, must prepare a master's degree program for approval by the Department Graduate Coordinator and the Associate Vice President of Graduate Studies and Research.

Students in this degree program emphasize botany, entomology, zoology or conservation biology through choice of advisor, committee, course work and thesis.

A Master of Science degree in Marine Science is available through San José State University at Moss Landing Marine Laboratories. See appropriate section of this catalog.

	Semester Units
Graduate Courses in Biology BIOL 201 and BIOL 202	4
Additional Graduate Course Any approved 255 course (any department prefix or suffix)	1-4
Thesis BIOL 299	1-3
Electives 100- or 200-level courses chosen with advisor consent	19-24
Total Units Required	30

All students must demonstrate competency in written English. A public seminar on the thesis must be given.

MS - Biological Sciences, Concentration in Physiology

Completing Requirements for the MS - Biological Sciences, Concentration in Physiology

See the introduction to department graduate programs for policies governing admission to classified standing for all master's programs in biology. All students, in consultation with their graduate faculty advisor and committee members, must prepare a master's degree program for approval by the Department Graduate Coordinator and the Associate Vice President of Graduate Studies and Research.

Students in this degree program emphasize plant or animal physiology through choice of advisor, committee, course work and thesis.

	Semester Units
Graduate Courses in Biology BIOL 201, BIOL 202 and BIOL 284	5-7
Additional Biology Course BIOL 227 or BIOL 255P	1-3
Thesis BIOL 299	1-3
Electives 100- or 200-level courses chosen with advisor consent	20-24
Total Units Required	30

All students must demonstrate competency in written English. A public seminar on the thesis must be given.

MS - Biological Sciences, Concentration in Molecular Biology and Microbiology

Completing Requirements for the MS - Biological Sciences, Concentration in Molecular Biology and Microbiology

See the introduction to department graduate programs for policies governing admission to classified standing for all master's programs in biology. All students, in consultation with their graduate faculty advisor and committee members, must prepare a master's degree program for approval by the Department Graduate Coordinator and the Associate Vice President of Graduate Studies and Research.

Students in this degree program emphasize molecular biology, genetics, cell biology, immunology or microbiology through choice of advisor, committee, course work and thesis.

	Semester Units
Graduate Courses in Biology BIOL 201 and BIOL 202	4
Additional Biology Course BIOL 205, BIOL 233, BIOL 255M or MICR 270	1-4
Thesis BIOL 299	1-3
Electives 100- or 200-level courses chosen with advisor consent	19-24
Total Units Required	30

All students must demonstrate competency in written English. A public seminar on the thesis must be given.

Biomedical, Chemical and Materials Engineering Department

College of Engineering

Engineering Building 385
408-924-4000
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cme@email.sjsu.edu
www.engr.sjsu.edu/cme/

Professors

Emily L. Allen, Associate Dean
Wenchiang R. Chung
Stacy H. Gleixner
Michael B. Jennings
Melanie A. McNeil
Guna S. Selvaduray
Gregory L. Young, Chair

Associate Professors

Claire F. Komives

Curricula

BS, Biomedical Engineering
BS, Chemical Engineering
BS, Materials Engineering
Minor, Bioengineering
Minor, Materials Science and Engineering
MS, Biomedical Engineering
MS, Chemical Engineering
MS, Engineering, Concentration in Biomedical Devices
MS, Materials Engineering

Introduction

The Biomedical, Chemical and Materials Engineering Department is the home of the Biomedical, Chemical Engineering and Materials Engineering undergraduate and graduate degree programs, as well as a Biochemical Engineering emphasis (which combines components from programs in chemical engineering, biology and chemistry).

The Chemical Engineering and Materials Engineering disciplines are similar in that each combine significant components of chemistry, physics, and engineering. The CHE programs offer emphases in biotechnology, materials science, environmental, or microelectronics processing. The MATE programs provide emphases on structural materials, electronic materials, bio and nanomaterials. Chemical Engineers generally work in manufacturing environments dealing with the processing of gas and liquid phase products, while Materials Engineers typically work in development of solid phase processes. Graduates of both programs find employment in Silicon Valley in the electronics, semiconductor equipment and processing, data storage, nanotechnology and biotechnology industries.

Biomedical, Chemical and Materials Engineering Mission Statement

The mission of the department is to provide the best possible academic preparation for the wide range of professional opportunities available to Biomedical, Chemical and Materials Engineers with an emphasis on technologies that are centered in the Bay Area.

BS Biomedical Engineering Program

Students majoring in biomedical engineering will have the satisfaction of being actively engaged in a discipline which has human health and welfare as its primary focus. Its importance in contributing to the quality of life has been recognized in the US and world-wide. It is an inherently interdisciplinary field in which professionals from the physical sciences play a major role in developing engineered products that are subject to regulation by the US Food and Drug Administration.

The B.S. Biomedical Engineering program has been designed, in consultation with potential employers, to prepare graduates for the wide variety of emerging inter-disciplinary careers at the interfaces between engineering and life sciences. The coursework has been designed to provide the student with solid engineering and biology fundamentals. Students will also take courses that uniquely prepare them to function effectively in a regulated environment in which they will develop health-related products and techniques that improve the quality of life. Technical elective courses may be taken from the list of electives provided on the department website, and could include courses in the areas of Biomedical Devices, Bioelectronics, Biotransport, Manufacturing and Management, or Bioinformatics so that they will be better prepared for these biomedical engineering subsectors. The courses are also designed to enable the student to continue onto graduate school or medical school.

This program also incorporates the soft skills necessary for professional success in the global marketplace and lifelong learning. Development of the ability to address and deal with ethical issues, which are of paramount importance in the field of biomedical engineering, and communications skills are integrated into the classes throughout the curriculum.

The B.S. Biomedical Engineering Program is designed to produce graduates who will be able to:

- Practice engineering in fields such as design, research, development, testing, and manufacturing;
- Engage in lifelong self-directed learning to maintain and enhance professional skills;
- Conduct themselves as ethical and responsible professionals as well as articulate the environmental, safety and economic impacts of their work on society;
- Fulfill the needs of society by solving technical problems using engineering principles, tools and practices, in an ethical and responsible manner;
- Demonstrate leadership skills in the workplace and function professionally in a globally competitive environment.

In addition to the baccalaureate degree major in Biomedical Engineering, the department offers a Minor in Biomedical Engineering available to any engineering or science major.

BS Chemical Engineering Program

The BSCHE curriculum provides broad training in the chemical and engineering principles fundamental to the manufacture of products as diverse as chemicals, plastics, pharmaceuticals, foods, textiles, petroleum derivatives and semiconductors. Courses revolve around the application of mathematics, chemistry, physics and engineering principles to the design, construction, operation, control and improvement of equipment for the implementation of chemical processes on an industrial scale, economically and with minimum adverse impact on the environment. Program emphases are available in biotechnology, environmental engineering and semiconductor processing, and can be developed in other specialized areas to meet student requests. Students in the BS program are prepared to enter directly into engineering practice or to go on to graduate school. The BS ChE program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

The BS Chemical Engineering Program Educational Objectives are designed to produce graduates who within 3 years of graduation, are able to:

- Be employed as a practicing engineer in fields such as design, research, development, testing and manufacturing;
- Engage in lifelong self-directed learning to maintain and enhance professional skills.
- Conduct themselves as ethical and responsible professionals as well as articulate the environmental, safety and economic impacts of their work on society.
- Demonstrate leadership skills in the workplace.

BS Materials Engineering Program

Materials rank with energy and information as basic resources of mankind. Materials engineers work in every field of industry, including semiconductor equipment and processing, biotechnology, failure analysis and development of metallurgical processes. They design materials and processes for recreational equipment, biomedical devices, and communication devices.

The undergraduate curriculum is designed to give specialized professional training with a broad engineering and scientific background. The major area of study is engineering materials with emphasis on the relationship of structure, properties and processing of materials to their performance. Various classes of materials are studied, including metals, semiconductors, polymers, ceramics and composites. The program emphasizes the functions of design, development and production, and also prepares the exceptional student for research and graduate study. The BS MatE program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

The BS Materials Engineering Program Educational Objectives are designed to produce graduates who within 3 years of graduation, are able to:

- Be employed as a practicing engineer in fields such as design, research, development, testing and manufacturing;
- Engage in lifelong self-directed learning to maintain and enhance professional skills.
- Conduct themselves as ethical and responsible professionals as well as articulate the environmental, safety and economic impacts of their work on society.
- Demonstrate leadership skills in the workplace.

In addition to the baccalaureate degree major in Materials Engineering, the department offers a Minor in Materials Science and Engineering, available to any engineering or science major.

Advisement

All Biomedical, Chemical and Materials Engineering students are required to have an academic advisor. Every semester all students must see a program advisor for official approval of their proposed academic program. More information can be found on the departmental website at www.engr.sjsu.edu/cme.

See Engineering Preparation and Common Area Requirements section for details common to all engineering curricula.

All College of Engineering undergraduate majors are required to maintain a Major GPA of 2.0 or above. Major GPA includes all courses required for the major, including math, science and engineering.

BS - Biomedical Engineering

Semester Units

General Education Requirements 12
Of the 51 units required by the university, 36 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Support for the Major 12
AMS 001A and AMS 001B

Math and Science Requirements 38
MATH 030, MATH 031, MATH 032 and MATH 133A (13); PHYS 070 and PHYS 071 (8); CHEM 001A, CHEM 001B, CHEM 009, CHEM 112A and CHEM 112B (17)

Required for the Major 64

Engineering Common Area 19
CE 099, CMPE 030, EE 098, ENGR 010, ENGR 100W, MATE 025 and ME 020

Biology Foundation 13
BIOL 001A, BIOL 001B and BIOL 054

Biomedical Engineering Major Courses 23
BME 115, BME 117, BME 173, BME 174, BME 177, BME 198A and BME 198B (20); CHE 162 or ISE 130 (3)

Technical Electives 9
Electives must be selected from the approved departmental list in consultation with the student's advisor.

Total Units Required 131

Note: AMS 001A and AMS 001B together fulfill GE Areas C1, C2, D1, D2 and D3. Individual classes in these GE Areas may be taken in place of the AMS 001A and AMS 001B requirement.

Note: PHYS 050, PHYS 051 and PHYS 052 may be taken in place of PHYS 070 and PHYS 071.

A semester-by-semester schedule for meeting these requirements is available in the department office or on the departmental website at www.engr.sjsu.edu/cme.

BS - Chemical Engineering

Semester Units

General Education Requirements 30-33
Of the 51 units required by the university, 18-21 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Math and Science Requirements 31
MATH 030, MATH 031, MATH 032 and MATH 133A (13); PHYS 070 and PHYS 071 (8); CHEM 001A and CHEM 001B (10)

Required for the Major 71

Engineering Common Area 17
CHE 190, CE 099, EE 098, ENGR 010, ENGR 100W and MATE 025

Required courses in Engineering and Science 45
CHE 115, CHE 151, CHE 158, CHE 160A, CHE 160B, CHE 161, CHE 161L, CHE 162, CHE 162L, CHE 165, CHE 185, CHEM 112A, CHEM 112B, CHEM 113A, CHEM 161A and CHEM 162L

Approved Technical Electives 6
Electives must be selected from the approved departmental list in consultation with the student's advisor.

Upper Division Chemistry Elective 3
Electives must be selected from the approved departmental list in consultation with the student's advisor.

Total Units Required 134-137

Note: PHYS 050, PHYS 051 and PHYS 052 may be taken in place of PHYS 070 and PHYS 071.

A semester-by-semester schedule for meeting these requirements is available in the department office or on the departmental website at www.engr.sjsu.edu/cme.

Note: The Lower Division Core (LD Core) consists of all the first and second year math, science and engineering classes. CE 095 may be taken in place of CE 099 to satisfy completion of the LD Core. The LD Core must be satisfied with a GPA of 2.0 or better in order to graduate. The following portion of the Lower Division Core must be satisfied with course grades of "C-" or better in order to enroll in the CHE Junior Core: PHYS 051 and PHYS 052, or PHYS 071; MATH 031, MATH 032 and MATH 133A, CHEM 001A and CHEM 001B.

The CHE Junior Core consists of a 2.0 average in {CHE 115, CHE 151, CHE 160A, CHE 162 and CHE 190} 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 CHE Senior Core consists of {CHE 161L, 162L, 165, 185, 160B, and 158}.

One (1) Technical or Chemistry elective must have a laboratory component.

BS - Materials Engineering

Semester Units

General Education Requirements 30
Of the 51 units required by the university, 21 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 31
MATH 030, MATH 031, MATH 032 and MATH 133A (13); PHYS 070 and PHYS 071 (8); CHEM 001A (5); CHEM 001B (5)

Required for the Major 68

Engineering Common Area 14
EE 098, ENGR 010, ENGR 100W, MATE 025 and CE 099

Required Engineering and Science Courses 45
MATE 115, MATE 141, MATE 143, MATE 144, MATE 151, MATE 152, MATE 153, MATE 154, MATE 155, MATE 185, MATE 186, MATE 191, MATE 195, MATE 198A, MATE 198B, CHE 161, CHE 162 and CHEM 161A

Approved Technical Electives 9
Selected from the approved departmental list in consultation with the student's advisor

Total Units Required 131

Note: PHYS 050, PHYS 051 and PHYS 052 may be taken in place of PHYS 070 and PHYS 071.

A semester-by-semester schedule for meeting these requirements is available in the department office or on the departmental website at www.engr.sjsu.edu/cme.

Note: The Lower Division Core (LD Core) consists of all the first and second year math, science and engineering classes. CE 095 may be taken in place of CE 099 to satisfy completion of the LD Core. The LD Core must be satisfied with a GPA of 2.0 or better in order to graduate. The following portion of the Lower Division Core must be satisfied with course grades of "C-" or better in order to enroll in the MATE Junior Core: PHYS 051 and PHYS 052, or PHYS 071; MATH 031, MATH 032 and MATH 133A, CHEM 001A and CHEM 001B.

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 195, 198A, 198B, 185, and 152}.

Minor - Bioengineering

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 students major, i.e., the same courses cannot be listed both on the minor and the major forms. ENGR 115 (4 units) and ENGR 177 (3 units) are required for all students taking this minor. In consultation with the Bioengineering advisor, students must select one additional course from a group of biology-based courses and one from a group of 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 Bioengineering advisor for students majoring in biology, physics or chemistry.

	Semester Units
BME 115 (4); ENGR 177 (3); Complete one course from: BIOL 021, BIOL 023, BIOL 065, BIOL 109 (3-4); Complete one course from: MATE 175, ME 167, CHE 192, BIOL 121, ISE 162, EE 127, ENGR 272, ENGR 274 (3) (13-14)	
Total Units Required	13-14

Minor - Materials Science and Engineering

Students enrolled in good standing in an engineering or science major may complete a Minor in Materials Science and 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 025 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 student receives instructor permission to waive them.

	Semester Units
Electronic Materials and Processing Option Complete twelve units from: MATE 025, MATE 115, MATE 129, MATE 141, MATE 153, MATE 166, MATE 167	12
Structural and Mechanical Materials Option Complete twelve units from: MATE 025, MATE 115, MATE 135, MATE 141, MATE 175, MATE 185, MATE 186, MATE 195	12
General Materials Option MATE 025, MATE 115 and 9 additional units from either of the other options	12
Total Units Required	12

MS - Biomedical Engineering

Students pursuing the MS Biomedical Engineering program will have the satisfaction of being actively engaged in a discipline that has human health and welfare as its primary focus. It 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.

The M.S. Biomedical Engineering program has been designed, in consultation with potential employers, to prepare graduates for the wide variety of emerging interdisciplinary careers at the interfaces between engineering and life sciences. The coursework has been designed to build upon the student's background in engineering, chemistry or physics. Students will take courses that uniquely prepare them to function effectively in a regulated environment in which they will develop health-related products and techniques that improve the quality of life. Technical elective courses may be taken from the list of electives provided on the department website, in consultation with the academic advisor. The electives, in combination with the required thesis or project research, will enable the student to develop depth in one of the many areas that biomedical engineering encompasses.

Program Objectives

This program also incorporates the skills such as oral and written communications, team work, and the ability to address and deal with ethical issues that are necessary for professional success in the global marketplace and lifelong learning. The M.S. Biomedical Engineering Program is designed to produce graduates who will be able to:

- Solve complex biomedical engineering problems and tasks, including in design, manufacturing and quality control, and use engineering, science, and relevant regulations to justify recommendations.
- Evaluate the impact of their work on their fellow human beings and society, including regulatory, ethical, economic, global and environmental considerations.
- Deliver effective presentations of biomedical engineering results in written and oral formats.
- Engage in lifelong self-directed learning to maintain and enhance professional skills and capabilities and keep abreast of the rapid developments in biomedical engineering and science.

Be effective leaders capable of working in diverse environments and teams, in a globally competitive landscape.

Requirements for Admission

Candidates must meet all the university admission requirements. Students can be admitted in eithr 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 2.75 or better in the last 60 semester units.

Students can be admitted with 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. Once these are completed satisfactorily, students can petition for classified standing. For more information on the transition courses contact the biomedical engineering coordinator at cme@email.sjsu.edu.

Requirements for Candidacy

Students must meet the university requirements for candidacy which includes successful completion of the Graduate English Writing Requirement. 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 "Competency in Written English" for details.

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 and a cumulative GPA of 3.0 or better. In addition to the 30 approved course units, students must also complete a written thesis or project report and an oral defense of their thesis or project. Either Plan A (thesis) or Plan B (project) may be chosen by the candidate. Minimum requirements for each plan are as follows:

	Semester Units
Core Requirements ENGR 201, ENGR 220 and ENGR 274	9
Biomedical Engineering Electives Choose fifteen to eighteen units from: BME 117, CHE 293, EE 127, EE 261, EE 262, ENGR 272, MATE 175, ME 267	15-18
Plan A (Project Option) CHE 281 and CHE 298	3
Plan B (Thesis Option) CHE 281, CHE 298 and CHE 299	6
Total Units Required	30

MS - Engineering, Concentration in Biomedical Devices

Completing Requirements for the MS - Engineering, Concentration in Biomedical Devices

The concentration in Biomedical Devices 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 is an inherently interdisciplinary field. The 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.

A student must meet all of the requirements for entry into the Master of Science in Engineering Program. The prerequisite courses for this concentration are:

- BIOL 65 - Human Anatomy (4 units)
- CE 112 - Mechanics of Materials (3 units)
- MATE 25 - Introduction to Materials Engineering (3 units)
- EE 98 - Circuit Analysis (3 units)
- CHEM 1A - General Chemistry (5 units)
- CHEM 1B - General Chemistry (5 units)
- PHYS 71 - Electricity and Magnetism (4 units)
- PHYS 72 - Atomic Physics (4 units)

Students who have not completed the equivalent of these classes during their undergraduate program will be required to complete these classes, in addition to the 30 semester units required for the Master of Science degree.

	Semester Units
Core Courses ENGR 201 and ENGR 203	6
Required Courses ENGR 177, ENGR 272, ENGR 274, MATE 175 and ME 267	15
Electives Plan A (3); Plan B (6). Electives must be approved by the Concentration Area Coordinator.	3-6
Thesis or Project Plan A (Thesis): ENGR 281 (1) then ENGR 299 (5); or Plan B (Project): ENGR 281 (1) then ENGR 298 (2)	3-6
Total Units Required	30

MS - Chemical Engineering

The MS Chemical Engineering program provides advanced study of chemical engineering topics with emphasis on both the fundamental and applied aspects. A multi-disciplinary approach to education is evident in the Chemical Engineering program's specialization areas of biotechnology, environmental engineering, and semiconductor processing. Elective courses are also available in science, business, and other engineering fields. This broad-based, multi-disciplinary education has proven to be an important factor for a student's future success, either at leading Silicon Valley companies or 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.

The faculty are actively involved in research in a number of areas including: biochemical engineering, semiconductor processing, polymers and nanocomposites, nanotechnology and environmental health, safety and remediation. Research activity is sponsored by local industries as well as by government funding agencies.

The Chemical Engineering program welcomes students with undergraduate degrees in a variety of other engineering and science disciplines.

For more information visit the department website: www.engr.sjsu.edu/cme/ or email: cme@email.sjsu.edu.

Program Objectives

The CHE Master's program is designed to produce graduates who:

- Are able to solve complex engineering problems and tasks, and use engineering, science and statistics principles to justify recommendations.
- Are able to evaluate the impact of their work on society, including ethical, economic, global and environmental aspects.
- Can deliver effective presentations of engineering results in written and oral formats.
- Have life-long learning skills and are able to apply their engineering knowledge to critically evaluate relevant literature and new technologies or systems.
- Are effective leaders, capable of working in diverse environments.
- Are able to apply their engineering education to a variety of career paths.

Requirements for Admission

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, 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 US accredited university in which they obtained a 2.7-2.99 GPA in the last 60 units; a CHE degree from a non-US institution; or a BS degree in an engineering discipline, 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 for classified standing. For more information on the transition courses, contact the graduate coordinator at cme@email.sjsu.edu {mailto:cme@email.sjsu.edu}.

Requirements for Candidacy

Students must meet the university requirements for candidacy which includes successful completion of the Graduate English Writing Requirement. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape.

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 a cumulative GPA of 3.0 or better. In addition to the 30 approved course units, students must also complete a written thesis or project report and an oral defense of their thesis or project. Either Plan A (thesis) or Plan B (project) may be chosen by the candidate. Minimum requirements for each plan are as follows:

	Semester Units
Plan A (with Thesis)	30
CHE 207, CHE 211, CHE 218 and CHE 219 (12); 12 units of approved electives (12); 1 unit of thesis prep (CHE 281) (1); 2 units of project (CHE 298) (2); 3 units of thesis (CHE 299) (3)	
Plan B (without Thesis)	30
CHE 207, CHE 211, CHE 218 and CHE 219 (12); one graduate engineering math course (3); 12 units of electives (12); 1 unit of project prep (CHE 281) (1); 2 units project (CHE 298) (2)	
Total Units Required	30

MS - Materials Engineering

The MS Materials Engineering program provides advanced study of materials engineering topics with emphasis on both the fundamental and applied aspects. A multi-disciplinary approach to education is evident in the materials engineering program's specialization areas of semiconductor processing, structural materials, and biomaterials. Elective courses are also available in science, business, and other engineering fields. This broad-based, multi-disciplinary education has proven to be an important factor for a student's future success, either at leading Silicon Valley companies or 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.

The faculty are actively involved in research in a number of areas including electronic and magnetic materials, microelectronics processing, nanomaterials, MEMS, microelectronic packaging, polymers, composites and biomaterials. Research activity is sponsored by local industries as well as by government funding agencies.

The Materials Engineering program welcomes students with undergraduate degrees in a variety of other engineering and science disciplines.

For more information visit the department website: www.engr.sjsu.edu/cme/ or email: cme@email.sjsu.edu {mailto:cme@email.sjsu.edu}.

Program Objectives

The MATE Master's program is designed to produce graduates who:

- Are able to solve complex engineering problems and tasks, and use engineering, science and statistics principles to justify recommendations.
- Are able to evaluate the impact of their work on society, including ethical, economic, global and environmental aspects.
- Can deliver effective presentations of engineering results in written and oral formats.
- Have life-long learning skills and are able to apply their engineering knowledge to critically evaluate relevant literature and new technologies or systems.
- Are effective leaders, capable of working in diverse environments.
- Are able to apply their engineering education to a variety of career paths.

Requirements for Admission

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, a student must possess a BS degree with a major in materials science or engineering or its equivalent from an accredited institution and a grade point average of 2.6 or better in the last 60 units.

Students can be admitted with conditionally classified standing if they have a BS degree in an engineering discipline, 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, contact the graduate coordinator at cme@email.sjsu.edu {mailto:cme@email.sjsu.edu}.

Requirements for Candidacy

Students must meet the university requirements for candidacy which includes successful completion of the Graduate English Writing Requirement. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape.

Course 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. In addition to the 30 approved course units, students must also pass a comprehensive oral examination administered by the department faculty. Students must complete a written thesis or project report and an oral defense of their thesis or project. Either Plan A (thesis) or Plan B (project) may be chosen by the candidate. Minimum requirements for each plan are as follows:

	Semester Units
Plan A (Thesis)	30
MATE 205, MATE 210, MATE 215, MATE 241 and MATE 251 (15); 9 units of approved electives (9); 1 unit of thesis prep (MATE 281) (1); 2 units of project (MATE 298) (2); 3 units of thesis (299) (3)	
Plan B (Project)	30
MATE 205, MATE 210, MATE 215, MATE 241 and MATE 251 ((15)) (15); 12 units of approved electives (12); 1 unit of project prep (MATE 281) (1); 2 units of project (MATE 298) (2)	
Total Units Required	30

Business

College of Business

Business Tower 850 (Accounting and Finance)
Business Tower 250 (Management Information Systems)
Business Tower 750 (Marketing)
Business Tower 650 (Organization and Management)
Business Tower 350 (Graduate Programs)
408-924-3460 (Accounting and Finance)
408-924-7790 (Management Information Systems)
408-924-3506 (Marketing)
408-924-3550 (Organization and Management)
408-924-3420 (Graduate Programs)

Accounting and Finance

Professors

Thomas G. Black
Billy J. Campsey
Elizabeth Grace
Laura Ingraham
Elizabeth Jenkins
Frank Jones
Annette Nellen
Themis Pantos
Howard Turetsky
Janis K. Zaima, Chair

Associate Professors

Mary Calegari

Assistant Professors

Jang-Hyung Cho
Ashley Davis
Jinyi (Richard) Fu
Daoping (Steven) He
Stoyu Ivanov
Marco Pagani
Jian Zhang

Management Information Systems

Professors

Timothy Hill, Chair
Stephen Kwan
Ashraf Shirani
G. Kent Webb

Associate Professors

Richard J. Burkhard
Subhankar Dhar
Malu Roldan
Shailaja Venkatsubramanyan

Assistant Professors

Nitin Aggarwal
Leslie Albert
Hong Wang

Marketing

Professors

Howard W. Combs
Marilyn Easter
Jeffrey A. Fadiman
Kenneth C. Gehrt, Interim Chair
Joseph J. Giglierano, Interim Associate Dean, College of Business
Aharon Hibshoosh
M. Jeffrey Kallis
Therese Louie
Sak Onkvisit
Steven D. Silver
David E. Smith
Jacqueline S. Snell
Jerry L. Thomas
Richard A. Werbel

Associate Professors

Ronald E. Davis
David Mease
Mahesh Rajan, MBA Director
Robert E. Sibley, Jr.

Assistant Professors

Jennifer Bechkoff
David Czerwinski
Michael Merz
John C. Yi

Organization and Management

Professors

Anuradha Basu
Herman L. Boschken
Isaac Cohen
Nancy Da Silva
David Denzler
W. Mark Fruin
J. Leslie Jankovich
William Yuying Jiang, Chair
Anne Lawrence
Arvinder P.S. Loomba
Stanley B. Malos
Asbjorn Osland
Joyce Osland
Taeho Park
Randall E. Stross
Marlene Turner
Stuart J. Wells
Robert C. Wood

Associate Professors

Camille Johnson
Isabelle Lescent-Giles
Gita Mathur
Carol Reade
Simon Rodan
Meghna Virick

Assistant Professors

S. Noorein Inamdar
Xiaohong Quan
Lauren Ramsay
Alaka Rao
Chunlei Wang
Ming Zhou
Shu Zhou

Curricula

BS, Business Administration, Concentration in Accounting
BS, Business Administration, Concentration in Accounting Information Systems
BS, Business Administration, Concentration in Corporate Financial Management
BS, Business Administration, Concentration in Entrepreneurship
BS, Business Administration, Concentration in Finance
BS, Business Administration, Concentration in General Business
BS, Business Administration, Concentration in Human Resource Management
BS, Business Administration, Concentration in International Business
BS, Business Administration, Concentration in Management
BS, Business Administration, Concentration in Management Information Systems
BS, Business Administration, Concentration in Marketing
Minor, Business
Minor, Global Leadership and Innovation
MBA, Master of Business Administration
MS, Accountancy
MS, Taxation
MS, Transportation Management

Introduction

The College of Business is nationally accredited by the AACSB International - The Association to Advance Collegiate Schools of Business at both the undergraduate and graduate levels, the Western Association of Schools and Colleges and the California State Board of Education.

Mission of the College of Business

The College of Business at San José State University is the institution of opportunity, providing innovative business education and applied research for the Silicon Valley region.

Undergraduate Program

The College of Business offers one baccalaureate degree, the BS - Business Administration. All students, regardless of desired specialization, complete an interdisciplinary core of business courses (plus general education and prerequisite courses). In addition to breadth provided by the core curriculum, each student selects an area of specialization in which to concentrate. Concentrations are accounting, accounting information systems, corporate financial management, finance, human resource management, international business, management, management information systems, and marketing.

The Gary J. Sbona Honors Practicum

The Gary J. Sbona 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.

Business Student Advisement Center (BSAC)

BSAC is the central College of Business advisement center for all undergraduate business majors and minors. BSAC provides information, program counseling and the forms necessary for completing an approved program of business study. BSAC directly advises students about general education and business core courses, and refers students to appropriate faculty advisement for their chosen concentration.

The center is located in Boccardo Business Center. Appointments or drop-in visit hours are available.

Transfer students should order and retain a complete set of transcripts from all colleges and universities attended and bring these to BSAC when requesting advisement. If transferring from out of the region, having a copy of the catalog(s) and course syllabi will be helpful in determining course equivalencies.

Requirements for all BS - Business Administration Majors

All majors in business administration who seek the Bachelor of Science degree must successfully complete at least 120 units involving several categories of courses. General education courses are required by the university and the State of California to promote breadth of knowledge in a variety of fields beyond direct career applications. All business majors must complete BUS/PHIL 186, (Business and Professional Ethics), which earns general education credit, and one non-business global perspectives course which can earn general education credit (see BSAC for list).

Lower Division Business Pool and Support Courses

Business majors are expected to complete lower division business and support courses as prerequisites to upper division business courses. These consist of: MATH 071; ECON 001A, 001B; ENGL 001B; BUS 010 (freshmen) BUS 020, 021, 080, 090, 091L. To be eligible to enroll in upper division business courses, business majors will need to schedule an advisement appointment with the Business Student Advisement Center (BC 008). At minimum, students must complete MATH 071, ENGL 001B, BUS 020, and BUS 090 with grades of "C" or better in all prior to any upper division business courses. Note: Accounting, AIS and Corporate Financial Management majors are not required to take BUS 021.

Upper Division Business Core and Concentration

After satisfying the lower division business and support requirements, students advance to upper division course work which consists of courses in three fields of study: Business Fundamentals provides competencies in basic business functions and skills, Business Integration and Perspectives provides an interdisciplinary comprehension of the field of business and perspectives on critical issues such as ethics and global forces, and Concentrations provides a choice for career specialization. These requirements apply to all majors seeking the BS - Business Administration degree.

All students must complete MATH 071, ENGL 001B, BUS 020, and BUS 090 with grades of "C" or better prior to any upper division business courses.

BUS 010 is recommended only of SJSU freshmen. Management Information Systems students take BUS 110A in place of BUS 188.

Non-business global perspectives courses may be counted elsewhere for general education credit.

BS - Business Administration, Concentration in Accounting

Accounting is a recognized profession concerned with the measurement, analysis, interpretation and communication of economic data. Students are prepared for careers as certified public accountants and managerial accountants for both the private and public sectors of the economy. The curriculum is designed to develop a basic understanding of the conceptual framework underlying the measurement and communication of economic data; a technical competence for effectively measuring, assimilating and communicating economic data; an awareness of the moral and ethical considerations involved; and incentives to grow and keep pace with ever-changing issues, conditions, forces and ideas.

Semester Units

General Education Requirements 33
Of the 51 units required by the university, 18 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 17
COMM 100W, ENGL 100WB or LLD 100WB (3); ECON 001A, ECON 001B, MATH 071 and ENGL 001B (14)

Lower Division Business and Support 10

BUS 010 is recommended only for SJSU freshmen.</cstyle:>
BUS 020, BUS 080, BUS 090 and BUS 091L

Business Fundamentals (Upper Division) 18
BUS 122A, BUS 130, BUS 140, BUS 160, BUS 170 and BUS 190

Business Integration and Perspectives (Upper Division) 15
PHIL 186, BUS 187, BUS 188, BUS 189 and one non-business global perspectives course (Area V)

Accounting Foundation Courses 15
BUS 120A, BUS 121A, BUS 121B, BUS 123A and BUS 129A

Major Electives 9
Group I. BUS 125 or BUS 126 (3); *Group II.* BUS 123C or BUS 128 (3); *Group III.* BUS 120B, BUS 122B, BUS 124, BUS 127A or BUS 129B (*) (3)

Electives 1

Total Units Required 120

*Those elective not taken in I and II may be used to satisfy Group III.

All students must complete MATH 071, ENGL 001B, BUS 020, and BUS 090 with grades of "C" or better prior to any upper division business courses.

Additionally, to qualify for a baccalaureate in business administration with an accounting concentration, a grade of "C" (2.0) or better is required in each of the following courses: BUS 020, 120A, 121A, 121B, 122A, and 123A.

BS - Business Administration, Concentration in Accounting Information Systems

This unique program prepares students to bridge the gap between two disciplines that are critical to business operations: Accounting and Management Information Systems. The program is taught exclusively within the Department of Accounting and Finance which strengthens the curriculum structure of the program focusing on important, relevant accounting, internal controls, and information technology issues. AIS students take courses in database design, networking and data communications, systems analysis and design, and IT audit, all with an accounting emphasis.

Students who complete this concentration will be entering into one of the fastest growing, most dynamic areas in accounting. Graduates are attractive to public accounting firms and corporations with jobs such as liaisons between the accounting/financial systems users and the information systems technical staff or to design and deploy information technology to improve the accounting systems of an organization. Careers might take paths in areas such as IT or internal audit, forensic accounting, risk management, or litigation services. This qualifies students to sit for the CPA (Certified Public Accountant) and CISA (Computer Information Systems Auditor) examinations.

Semester Units

General Education Requirements 33
Of the 51 units required by the university, 18 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 17
COMM 100W, ENGL 100WB or LLD 100WB (3); ECON 001A, ECON 001B, MATH 071 and ENGL 001B (14)

Lower Division Business and Support 10

BUS 010 is recommended only for SJSU freshmen.</cstyle:>
BUS 020, BUS 080, BUS 090 and BUS 091L

Business Fundamentals (Upper Division) 18
BUS 122A, BUS 130, BUS 140, BUS 160, BUS 170 and BUS 190

Business Integration and Perspectives (Upper Division) 15
PHIL 186, BUS 187, BUS 188, BUS 189 and one non-business global perspectives course (Area V)

AIS Foundation Courses 24
BUS 120A, BUS 120B, BUS 120C, BUS 120D, BUS 120G, BUS 121A, BUS 121B and BUS 123A

Electives 3
Complete one course from: BUS 124, BUS 127A, BUS 129A, BUS 129B

Total Units Required 122

All students must complete MATH 071, ENGL 001B, BUS 020, and BUS 090 with grades of "C" or better prior to any upper division business courses.

Additionally, to quality 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" (2.0) or better.

BS - Business Administration, Concentration in Corporate Financial Management

This unique concentration is designed for students who are attracted to career opportunities in corporate financial management. The concentration integrates two highly valued disciplines, Accounting and Finance.

The curriculum design develops a basic understanding of the conceptual framework underlying the measurement and communication of accounting data; a technical competence for effectively measuring, and assimilating and communicating economic data, ultimately to make sound financial decisions. Awareness of moral and ethical considerations in business is emphasized along with identifying incentives to grow and keep paced with ever-changing issues, conditions, forces, and ideas. The curriculum significantly enhances the attractiveness of its graduates to corporate finance groups as entry-level hires, and for the long-term, positions them to compete for roles in management. Students will take five accounting and five finance courses. An additional few accounting courses enable a student to sit for the Certified Public Accounting (CPA) exam. CFM graduates are able to move seamlessly between accounting and finance careers increasing their marketability in a field that has limitless opportunities.

Semester Units

General Education Requirements 33
Of the 51 units required by the university, 18 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 17
COMM 100W, ENGL 100WB or LLD 100WB (3); ECON 001A, ECON 001B, MATH 071 and ENGL 001B (14)

Lower Division Business and Support 10
BUS 010 is recommended only for SJSU freshmen.</cstyle:>
BUS 020, BUS 080, BUS 090 and BUS 091L

Business Fundamentals (Upper Division) 18
BUS 122A, BUS 130, BUS 140, BUS 160, BUS 170 and BUS 190

Business Integration and Perspectives (Upper Division) 15
PHIL 186, BUS 187, BUS 188, BUS 189 and one non-business global perspectives course (Area V)

Major Requirements 30

Required Accounting Courses 12
BUS 120A, BUS 121A, BUS 121B and BUS 123A

Required Finance Courses 12
BUS 171A, BUS 173A, BUS 173B and BUS 177

Accounting Elective 3
Complete one course from: BUS 120B, BUS 122B, BUS 124, BUS 125, BUS 126, BUS 127A (may satisfy either elective), BUS 127B (*), BUS 128, BUS 129B

Finance Elective 3
Complete one course from: BUS 127A, BUS 127B, BUS 171B, BUS 172A, BUS 172B, BUS 172C, BUS 173C, BUS 174, BUS 175, BUS 179B

Elective 1

Total Units Required 126

*BUS 127B may only be taken if BUS 127A is selected as the Finance Elective.

All students must complete MATH 071, ENGL 001B, BUS 020, and BUS 090 with grades of "C" or better prior to any upper division business courses.

Additionally, to qualify for a baccalaureate degree in business administration with a corporate financial management concentration, all courses in the concentration must be completed with a grade of "C" (2.0) or better.

BS - Business Administration, Concentration in Entrepreneurship

The concentration in entrepreneurship 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.

Semester Units

General Education Requirements 36
Of the 51 units required by the university, 15 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 17
COMM 100W, ENGL 100WB or LLD 100WB (3); ECON 001A, ECON 001B, MATH 071 and ENGL 001B (14)

Lower Division Business and Support 13
BUS 020, BUS 021, BUS 080, BUS 090 and BUS 091L

Business Fundamentals (Upper Division) 12
BUS 130, BUS 140, BUS 170 and BUS 190

Business Integration and Perspectives (Upper Division) 15
PHIL 186, BUS 187, BUS 188, BUS 189 and one non-business global perspectives course (Area V)

Entrepreneurship Concentration 18

Required Courses 9
BUS 131D, BUS 173C and BUS 181

Additional Courses 9
Complete nine units from: BUS 136E, BUS 182, BUS 183, BUS 184, BUS 185, BUS 186S

Electives 7

Total Units Required 120

All students must complete MATH 071, ENGL 001B, BUS 020, and BUS 090 with grades of "C" or better prior to any upper division business courses.

Additionally, to qualify for a baccalaureate degree in business administration with an entreprenuership 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.

BS - Business Administration, Concentration in Finance

Three areas of financial decision-making are emphasized: corporate finance, investments and financial institutions. Corporate finance courses are designed to prepare the student for financial analysis and planning as essential functions of a business enterprise. The investments area emphasizes the decision-making processes required to analyze the valuation of securities such as stocks or bonds and the principles of managing an investment portfolio. Financial institutions are studied both from an external viewpoint that emphasizes the function of money and capital markets, and from the internal perspective of a manager of a financial institution such as a commercial bank, savings and loan, mutual fund or life insurance company. The objective is to prepare students for careers such as financial officer of a corporation or a financial institution responsible for investment and financing decisions.

Semester Units

General Education Requirements 33
Of the 51 units required by the university, 18 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 17
COMM 100W, ENGL 100WB or LLD 100WB (3); ECON 001A, ECON 001B, MATH 071 and ENGL 001B (14)

Lower Division Business and Support 13
BUS 020, BUS 021, BUS 080, BUS 090 and BUS 091L

Business Fundamentals (Upper Division) 15
BUS 130, BUS 140, BUS 160, BUS 170 and BUS 190

Business Integration and Perspectives (Upper Division) 15
PHIL 186, BUS 187, BUS 188, BUS 189 and one non-business global perspectives course (Area V)

Finance Concentration 18
BUS 171A, BUS 172A and BUS 173A (9); Complete three courses from: BUS 127A or BUS 127B (select one only), BUS 171B, BUS 172B, BUS 172C, BUS 173B, BUS 173C, BUS 174, BUS 175, BUS 177, BUS 179B (9)

Electives 7

Total Units Required 120

All students must complete MATH 071, ENGL 001B, BUS 020, and BUS 090 with grades of "C" or better prior to any upper division business courses. Additionally, ECON 001A, ECON 001B, and BUS 021 must be completed with grades of "C" or better in each.

Additionally, to qualify for a baccalaureate degree in business administration with a finance concentration, each of the following courses must be completed with a grade of "C" (2.0) or better: BUS 170, 171A, 172A, and 173A.

BS - Business Administration, Concentration in General Business

The general business concentration 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.

Semester Units

General Education Requirements 33
Of the 51 units required by the university, 18 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 17
COMM 100W, ENGL 100WB or LLD 100WB (3); ECON 001A, ECON 001B, MATH 071 and ENGL 001B (14)

Lower Division Business and Support 13
BUS 020, BUS 021, BUS 080, BUS 090 and BUS 091L

Business Fundamentals (Upper Division) 15
BUS 130, BUS 140, BUS 160, BUS 170 and BUS 190

Business Integration and Perspectives (Upper Division) 15
PHIL 186, BUS 187, BUS 188, BUS 189 and one non-business global perspectives course (Area V)

General Business Concentration 18

Required Courses 12
Courses selected must include at least one each from Marketing and Organization and Management. There could be as many as 12 units from any one department and as many as 6 units of advisor approved transfer credit.

Additional Courses 6
Any upper division business courses. Please see an advisor for a current list of acceptable courses.

Elective 7

Total Units Required 120

All students must complete MATH 071, ENGL 001B, BUS 020, and BUS 090 with grades of "C" or better prior to any upper division business courses.

BS - Business Administration, Concentration in Human Resource Management

The program 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.

Semester Units

General Education Requirements 33
Of the 51 units required by the university, 18 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 17
COMM 100W, ENGL 100WB or LLD 100WB (3); ECON 001A, ECON 001B, MATH 071 and ENGL 001B (14)

Lower Division Business and Support 13
BUS 020, BUS 021, BUS 080, BUS 090 and BUS 091L

Business Fundamentals (Upper Division) 15
BUS 130, BUS 140, BUS 160, BUS 170 and BUS 190

Business Integration and Perspectives (Upper Division) 15
PHIL 186, BUS 187, BUS 188, BUS 189 and one non-business global perspectives course (Area V)

Human Resource Management Concentration 18

Required Courses 15
BUS 150, BUS 154, BUS 157, BUS 158 and BUS 159

Additional Course 3
BUS 151, BUS 152, BUS 153, BUS 155 or BUS 156

Electives 7

Total Units Required 120

All students must complete MATH 071, ENGL 001B, BUS 020, and BUS 090 with grades of "C" or better prior to any upper division business courses.

Additional requirements for graduation: to qualify for a baccalaureate degree in business administration with an human resource concentration all courses in the concentration must be completed with a "C-" or better (Fall 2004 and later).

BS - Business Administration, Concentration in International Business

The concentration in International Business (IB) is designed to prepare students for today's global business world. IB is an interdisciplinary program covering the various business disciplines as well as course work in a minor, either area studies or foreign language, or a functional track within the College of Business. The tracks include combinations of IB and Entrepreneurship, IB and Finance, IB and Management Information Systems, or IB and Marketing. Foreign language proficiency is required. In addition, one of the study abroad options is also required: 1) a short-term faculty-led CSU course; 2) a semester in a foreign university approved by CSU; or 3) a semester internship with AIESEC or other internship program. The Chair of the Department of Organization and Management can waive this requirement (e.g., international students need not study abroad). Study abroad courses can be regarded as equivalent courses in substitution of the IB program requirements depending on the type of study abroad courses taken on an individual basis. This interdisciplinary approach is designed as a foundation for starting international careers. Graduates work in varied international areas such as export/import operations, sales/marketing, project management, accounting/finance, consulting, travel, governmental and non-governmental organizations.

Semester Units

General Education Requirements 33
Of the 51 units required by the university, 18 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 17
COMM 100W, ENGL 100WB or LLD 100WB (3); ECON 001A, ECON 001B, MATH 071 and ENGL 001B (14)

Lower Division Business and Support 13
BUS 020, BUS 021, BUS 080, BUS 090 and BUS 091L

Business Fundamentals (Upper Division) 15
BUS 130, BUS 140, BUS 160, BUS 170 and BUS 190

Business Integration and Perspectives (Upper Division) 12
PHIL 186, BUS 187, BUS 188 and BUS 189

International Business Concentration 27

Required Courses 9
BUS 133A, BUS 133B or BUS 133C (3); BUS 162 and BUS 177 (6)

Elective 3
Complete three units from: BUS 133A, BUS 133B, BUS 133C ((not taken in above set)), BUS 145, BUS 156, BUS 165A, BUS 168, BUS 183

Area Studies Minor, Foreign Language or IB-College of Business Track 15
(Area V covered) See advisor for approved cluster of courses.

Elective 1

Total Units Required 120

All students must complete MATH 071, ENGL 001B, BUS 020, and BUS 090 with grades of "C" or better prior to any upper division business courses. See Business Student Advising Center (BSAC) or Organization and Management Department for approved minors in Area Studies or Foreign Languages or College of Business approved functional tracks in entrepreneurship, finance, management information systems or marketing.

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 (Fall 2004 and later).

BS - Business Administration, Concentration in Management

Although presented and conducted in an overall business context, the Management Program is fundamentally designed to prepare its graduates for careers in management in all forms of business and nonbusiness, public or private, foreign or domestic. The objective is to teach the fundamental principles underlying organizations, to emphasize education which will improve students' thought processes, to provide a familiarity with the analytical tools of management and to develop the student's ability to use the techniques involved in analyzing and evaluating managerial problems and making sound decisions. Attention is focused on systems and quantitative analysis, behavioral science, the environment and the forces/processes of change within organizations.

Semester Units

General Education Requirements 33
Of the 51 units required by the university, 18 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 17
COMM 100W, ENGL 100WB or LLD 100WB (3); ECON 001A, ECON 001B, MATH 071 and ENGL 001B (14)

Lower Division Business and Support 13
BUS 020, BUS 021, BUS 080, BUS 090 and BUS 091L

Business Fundamentals (Upper Division) 12
BUS 130, BUS 140, BUS 170 and BUS 190

Business Integration and Perspectives (Upper Division) 15
PHIL 186, BUS 187, BUS 188, BUS 189 and one non-business global perspectives course (Area V)

Management Concentration 21

Required Courses 12
BUS 161A, BUS 161B, BUS 162 and BUS 166

Additional Courses 9
Complete three courses from: BUS 141, BUS 142, BUS 144, BUS 145, BUS 146, BUS 147, BUS 149, BUS 150, BUS 163, BUS 165A, BUS 165B, BUS 167, BUS 181, BUS 182, BUS 191, BUS 198

Electives 7

Total Units Required 120

All students must complete MATH 071, ENGL 001B, BUS 020, and BUS 090 with grades of "C" or better prior to any upper division business courses.

Additional requirements for graduation: 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 (Fall 2004 and later).

BS - Business Administration, Concentration in Management Information Systems

The Concentration in Management Information System merges the knowledge of information technologies, systems and management. Students gain practical knowledge and skills in integrating computers and other data/text/image/graphics/voice technologies into the management of business information. Computerized systems are developed as applied information tools for managerial decision making and action taking. Graduates of the MIS concentration will be prepared for careers in the rapidly expanding profession of using information technologies to support management planning and control.

Semester Units

General Education Requirements 33
Of the 51 units required by the university, 18 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 17
COMM 100W, ENGL 100WB or LLD 100WB (3); ECON 001A, ECON 001B, MATH 071 and ENGL 001B (14)

Lower Division Business and Support 13
BUS 020, BUS 021, BUS 080, BUS 090 and BUS 091L

Business Fundamentals (Upper Division) 15
BUS 130, BUS 140, BUS 160, BUS 170 and BUS 190

Business Integration and Perspectives (Upper Division) 15
PHIL 186, BUS 110A, BUS 187, BUS 189 and one non-business global perspectives course (Area V)

Management Information Systems Concentration 24

Required Courses 18
BUS 092, BUS 110B, BUS 111, BUS 112 and BUS 119B (15); BUS 119A or BUS 119H (3)

Additional Courses 6
Complete two courses from: BUS 113, BUS 113J, BUS 114, BUS 115, BUS 116, BUS 118B, BUS 118C, BUS 118W

Elective 1

Total Units Required 120

All students must complete MATH 071, ENGL 001B, BUS 020, and BUS 090 with grades of "C" or better prior to any upper division business courses.

Additional requirements for graduation: to qualify for a baccalaureate degree in business administration with a management information systems concentration, all courses in the concentration together with BUS 110A must be completed with a grade of "C" (2.0) or better.

BS - Business Administration, Concentration in Marketing

Business graduates with a marketing concentration are prepared to pursue careers in small business and retail store management; in marketing, product or advertising management; also direct marketing, customer service and sales. The marketing program 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.

Semester Units

General Education Requirements 33
Of the 51 units required by the university, 18 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 17
COMM 100W, ENGL 100WB or LLD 100WB (3); ECON 001A, ECON 001B, MATH 071 and ENGL 001B (14)

Lower Division Business and Support 13
BUS 020, BUS 021, BUS 080, BUS 090 and BUS 091L

Business Fundamentals (Upper Division) 15
BUS 130, BUS 140, BUS 160, BUS 170 and BUS 190

Business Integration and Perspectives (Upper Division) 15
PHIL 186, BUS 187, BUS 188, BUS 189 and one non-business global perspectives course (Area V)

Marketing Concentration 21

Required Courses 12
BUS 134A, BUS 134B, BUS 138 and BUS 139

Additional Courses 9
Complete three courses from: BUS 131A, BUS 131B, BUS 131C, BUS 131D, BUS 132A, BUS 132B, BUS 133A, BUS 133B, BUS 133C, BUS 134C, BUS 135, BUS 136

Electives 4

Total Units Required 120

All students must complete MATH 071, ENGL 001B, BUS 020, and BUS 090 with grades of "C" or better prior to any upper division business courses.

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 BUS 130 - 139 sequence.

Minor - Business

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 must include at least BUS 20N, Survey of Accounting, and BUS 160, Fundamentals of Management and Organizational Behavior, and nine additional units, three of which must be upper division courses. Six units must be completed in residence. Some majors have specific minor requirements. For engineering students, the following courses are required: BUS 195 (instead of BUS 20N), BUS 194 (instead of BUS 160), BUS 181, BUS 184, and ENGR 100W. Contact the Business Student Advisement Center (BBC 008) or your major advisor for more information.

Minor - Global Leadership and Innovation

The purpose of the Global Leadership and Innovation Minor is to: provide students with an opportunity to pursue their interest in global leadership and innovation; enable students to see themselves as leaders and innovators capable of visualizing future leadership roles in their profesion and other spheres of life; foster global citizenship; and prepare students to serve effectively in formal and informal leadership roles and make innovative contributions throughout their lives.

Semester Units

Required Courses 9
BUS 016, BUS 165A and BUS 165B

Electives 6
Any advisor approved leadership/innovation elective from a college other than the College of Business.

Total Units Required 15

Donald and Sally Lucas Graduate School of Business

The Donald and Sally Lucas Graduate School of Business offers the following graduate degree programs:

- Master of Business Administration
- Master of Science in Accountancy
- Master of Science in Taxation
- Master of Science in Transportation Management

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 wanting 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.

The Master of Business Administration provides advanced management education with the opportunity for a generalist degree. Frequently, students are working full-time, are in transition refocusing their careers, are from foreign countries, or are full-time students.

1. The Conventional MBA program is a full-time traditionally paced program with semester length courses offered on the San José State University campus. A portion of the MBA curriculum is offered in a cohort lock-step sequence; students select the remaining courses to complete the fourteen courses required for the MBA program, and may also opt for a study-abroad option during the second summer of study. The Conventional MBA program design enables students to complete the degree within an eighteen to twenty-four month time frame.

2.The MBA-One is a full-time, accelerated daytime program that is completed in twelve-months of intensive study. Offered at the Lucas School's Silicon Valley site, the MBA-One is structured for non-working individuals who prefer a rigorous cohort style of learning. Students move through the curriculum as an assigned group in six eight-week sessions. The MBA-One program's twelve month design allows students to enter or re-enter the workforce in less time than the other Lucas MBA programs take to complete.

3. The Executive-Style MBA program is a part-time evening program tailored for the working professional. Offered at the Lucas School's Silicon Valley site, the Executive-Style MBA is the most flexible Lucas MBA program. Accelerated courses are delivered year round on-site, online, and in blended (online and in-class) formats. Admission is offered in both fall and spring, enabling students to complete the MBA on a part-time basis in two and a half years.

4. The MS - Accountancy (MSA) program is a full-time, daytime, 12-month program that admits a limited number of only non-accounting undergraduate majors on the basis of a competitive process that includes assessments by practitioners as well as faculty. Course work is structured around the accounting cycle to strongly encourage students to combine academic learning with accounting work experience (or internships) as well-rounded preparation for careers in professional accounting.

5. The MS - Taxation (MST) program offers students technical 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 is offered at the Lucas School's Silicon Valley site.

6. The MS - Transportation Management (MSTM) 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 electronic technologies, providing an opportunity for students to obtain the degree at remote locations.

7. The MBA/MSE - Off-Campus accelerated evening sequential degree program is a combined program for engineering professionals who wish to pursue technical and executive management positions.

MBA - Master of Business Administration

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 career challenges. The basic program aims at creating a general management (rather than a functional specialist) perspective. Pragmatic in perspective, 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.

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; and 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 rather than those who prefer to develop reports and recommendations for decision makers. The MBA program accommodates students with a variety of educational and work backgrounds. Entering students who have an extensive and recent business education move quickly into the required advanced management courses. Those who are educated in fields other than business (such as engineering, science, arts or humanities) or whose undergraduate business education is more than seven years old, must first complete the three prerequisite courses to develop basic business competencies. Business development projects are available to MBA students. The Lucas School has alliances with business incubator partners in Silicon Valley. Students have an opportunity to work with international businesses and Silicon Valley entrepreneurial start ups.

San José State University Requirements for Graduate Admission to Classified Standing

To be considered for admission to graduate study, San José State University requires that an applicant has:

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 2.5 (on a 4.0 scale) grade point average (GPA).

3. Applicants who have earned a degree from an institution in which the principal language of instruction was not English must demonstrate English language proficiency. Either the TOEFL (Test of English as a Foreign Language) or IELTS (International English Language Testing System) English language proficiency exam is required.

Admission to the Lucas MBA Programs

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 GMAT scores - is a major factor in the admission decision. Other important areas of evaluation include essay responses, 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.

A competitive GMAT score is 550. An applicant's score must rank in at least the 50th percentile in both the verbal and quantitative components of the exam. We realize that the GMAT has certain limitations, as does any standardized test; however, the GMAT does allow comparison among applicants from different schools, different countries and different majors. We encourage all applicants to prepare for the exam, take it as early as possible, and retake it if their score is not competitive.

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 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.

Prerequisite Courses

Three undergraduate courses, Introduction to Microeconomics; Introduction to Macroeconomics; and Business Statistics are courses that must be completed as prerequisites for the MBA program and do not count as part of the program of study.

An applicant may be admitted to the MBA program prior to completion of these three classes but will need to provide proof of completion of all three prerequisites before the first day of instruction.

Program of Study Requirements for the MBA Degree

To earn the MBA degree, all students must satisfy the following requirements:

1. Business Prerequisite Courses

- Introduction of Macroeconomics (at SJSU this course is ECON 001A, Principles of Economics Macro)
- Introduction to Microeconomics (at SJSU this course is ECON 001B, Principles of Economics Micro)
- Business Statistics (at SJSU this course is BUS 90, Business Statistics)

2. Advanced Management Courses

Ten advanced graduate courses (30 units) are required of all students. These courses ensure breadth in general management knowledge and help the student to develop mastery in applying essential business skills.

3. Elective Courses

Beyond the ten required courses (and three prerequisite courses), a minimum of four electives (12 units) provide student choice for additional breadth.

4. Comprehensive Project

The comprehensive project is incorporated in the Strategic Thinking course (BUS 290). The comprehensive project is a culminating experience integrating business functional and interdisciplinary areas. 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 or business simulation, 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.

5. Competence in Written English

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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape.

6. 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. In addition, any student whose overall GPA falls below 3.0, regardless of the number of units completed, may be disqualified from the MBA program. It is the policy of the Donald and Sally Lucas Graduate School of Business not to readmit disqualified graduate students after a second disqualification.

7. Transfer Credit

Subject to the approval of the Donald and Sally Lucas Graduate School of Business Program Coordinator and validation by the Associate Vice President for Graduate Studies and Research, students may transfer a maximum of six semester units of business graduate course work from another AACSB-International accredited institution. Grades in the transfer courses must be "B" or better.

8. Other University Requirements

Students must comply with all other graduate requirements contained in this catalog.

Course Requirements

	Semester Units
Business Prerequisite Courses	0
Any of the three prerequisite courses may be waived through evidence of recent prior equivalency (within the last seven years with a grade of "B" or better).</cstyle:>	
Introduction to Microeconomics, Introduction to Macroeconomics, Business Statistics	
Advanced Management Courses (Breadth Requirements)	30
BUS 200W, BUS 202, BUS 210, BUS 220, BUS 230, BUS 250, BUS 260, BUS 270, BUS 280 and BUS 290 (includes comprehensive project)	
Elective Courses	12
Four elective courses must be taken to achieve a total of 42 semester units beyond foundation-level work. Subject to prior approval by an MBA advisor, up to six elective units (two classes) may be taken outside the College of Business.	
Total Units Required	42

MS - Accountancy

The Master of Science in Accountancy is a full-time degree program that is designed specifically for non-accounting undergraduate majors only. The program offers a 13 month course of study.

Purpose of the MSA Program

The MSA program is designed to expose students to appropriate disciplines necessary to work in a professional position in public accounting or in industry with strong preparation for both Public Accounting Certification (CPA) and career advancement.

Educational Objectives

The educational objectives of the MSA program are to provide students with a solid base of knowledge in accounting and general business courses, while preparing them for a ten week internship with public accounting firms and corporations.

Benefits of the MSA

The program is designed for the liberal arts or sciences undergraduate who is ambitious, highly motivated, and has a desire to become part of the accounting profession. The course work and the optional internship provide the opportunity for these individuals to build on their academic foundation the necessary framework to begin a successful and rewarding career in public accounting or corporate finance.

Requirements for Admission to Classified Standing

To be fully accepted into classified standing, an applicant must: be a non-accounting baccalaureate graduate of an accredited four-year college or university; have a grade point average (GPA) of 3.0 or better (on a 4.0 scale) in the last 60 semester/90 quarter units of course work; and have obtained a minimum score of 500 on the Graduate Management Admission Test (GMAT), including scores in the 50th percentile in both quantitative and verbal sections. AWA portion of the GMAT is also required. Applicants who do not possess a bachelor's degree from a postsecondary institution where English is the principal language of instruction must take and pass the TOEFL (Test of English as a Foreign Language) computer score of 263 or better; or an internet-based score of 106 or better. Students will also be required to submit a written essay and two references. In addition, personal interviews will be conducted.

Program of Study Requirements

To receive the Master of Science in Accountancy, students must complete 57 semester units of prescribed course work. Specific program policies include the following:

1. Prerequisites

The curriculum requires the following four prerequisite (minimum of 3 semester hours each) or its equivalents, must be completed with a grade of B or better prior to starting the program (around the last week of May). The four courses are Introductory Financial Accounting, Introductory Managerial Accounting, Business Statistics, and Economics (Macro or Micro). Prerequisite courses completion and/or verification of enrollment in prerequisite courses must be submitted to the Lucas Graduate School by the published GAPE document submission deadline.

2. Course Requirements

The 57 semester units of prescribed course work are required of all students. There are no electives. Each student attends all courses with the same as a cohort group.

3. Internship

The courses in the MSA program are designed to prepare students for internships with public accounting firms or corporations. During this period, they may participate in training programs with other new employees of the firm 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.

4. Competence in Written English

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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape.

5. Comprehensive Project

The comprehensive project is incorporated in Bus 220N, Organizational Behavior, Structure and Strategy. The comprehensive project is a culminating experience integrating business functional and interdisciplinary areas. An individual written project report is required and an oral examination may be included. The project may take the form of a field study, business plan, research project or business simulation, as assigned by the Bus 220N instructor.

6. 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. In addition, any student whose GPA falls below 3.0, or who receives two or more unsatisfactory grades ("C-", "D", "F", or "U") in graduate status, regardless of units completed, may be disqualified from the MSA program. It is the policy of the Donald and Sally Lucas Graduate School of Business not to readmit disqualified graduate students after a second disqualification.

7. Other University Requirements

Students must comply with all other graduate requirements contained in this catalog.

Course Requirements

	Semester Units
BUS 220A, BUS 220B, BUS 220C, BUS 220D, BUS 220E, BUS 220F, BUS 220G, BUS 220H, BUS 220I, BUS 220J, BUS 220L, BUS 220N, BUS 220P, BUS 220S, BUS 220U, BUS 220V and BUS 220X (51); BUS 220K or BUS 220T (6) (57)	
Total Units Required	57

MS - Taxation

The Master of Science in Taxation program is designed to provide individuals with the conceptual understanding and sound technical knowledge 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. Enrolled agents and college graduates with an Accounting or Business degree who wish to pursue a career in taxation will also benefit from the program (state fee schedule does not apply).

Requirements for Admission to Classified Standing

To be fully accepted into classified standing, an applicant must have:

- 1. Completed the following undergraduate courses (or equivalent) prior to admission. The SJSU course numbers for these courses are in parenthesis:
- Critical Thinking (COMM 041, ENGL 007, HIST 050, HUM 001A-B, HUM 002A-B, LING 021, PHIL 057, POLS 020).
- Financial Accounting (BUS1 020)
- Managerial Accounting (BUS1 021)
- Intermediate Accounting (BUS1 121A)
- Tax Factors of Business and Investment Decisions (BUS1 123A)
- These requirements may be fulfilled at a community college. If your undergraduate degree is in Accounting, all above requirements are waived.
- 2. A four-year bachelor's degree from an accredited college or university.
- 3. 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).
- 4. A score of at least 500 on the Graduate Management Admission Test (GMAT) with verbal and quantitative scores each in the 50th percentile or above, or a score of at least 145 on the LSAT, or passed the CPA exam.
- 5. Applicants who do not possess a bachelor's degree from a postsecondary institution where English is the principal language of instruction must take and pass the TOEFL (Test of English as a Foreign Language) with a paper score of 550 or better; a computer score of 213 or better; or an internet-based score of 80 or better.

Program of Study Requirements for the Master of Science in Taxation

1. Core Taxation Courses

Five core taxation courses (15 units) are required of all students.

2. Elective Courses

Students select a minimum of three taxation elective courses (9 units). In addition, two courses (6 units) may be additional taxation elective courses or may be selected in consultation with the graduate tax advisor.

3. Comprehensive Project

The comprehensive project is incorporated in BUS 223D, Seminar in Tax Planning and Practice and BUS 223E, Business and Tax Aspects of High Technology Companies. Students choose either BUS 223D or BUS 223E. An individual written project is required, and an oral examination may be included.

4. 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. In addition, any student whose GPA falls below 3.0, or who receives two or more unsatisfactory grades ("C-", "D", "F", or "U") in graduate status, regardless of units completed, may be disqualified from the MST program. It is the policy of the Donald and Sally Lucas Graduate School of Business not to readmit disqualified graduate students after a second disqualification.

5. Competence in Written English

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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape.

6. Transfer Credit

Subject to approval of the Donald and Sally Lucas Graduate School of Business Program Coordinator, students may transfer a maximum of six 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.

7. Other University Requirements

Students must comply with all other graduate requirements contained in this catalog.

Course Requirements

	Semester Units
Advanced Taxation Courses BUS 223A, BUS 223B, BUS 223C and BUS 223F (12); BUS 223D or BUS 223E (3)	15
Applied Taxation Elective Courses Complete five courses from: BUS 225A, BUS 225B, BUS 225C, BUS 225D, BUS 225F, BUS 225G, BUS 225H, BUS 225I, BUS 225J, BUS 225K, BUS 225L, BUS 225N, BUS 225O	15
Total Units Required	30

MS - Transportation Management

The mission of the MS - Transportation Management program is to provide 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 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 electronic technologies, providing an opportunity for students to obtain the degree at remote locations (state fee schedule does not apply).

Admission Requirements

- Four year undergraduate degree from an accredited institution, with a minimum 3.0 GPA for the last 60 units.
- Graduate Management Admission Test (GMAT) with a minimum score of 500, with balanced verbal and quantitative scores in the 50th percentile or above.
- For students who do not possess a bachelor's degree from a postsecondary institution where English is the principal language of instruction, the Test of English as a Foreign Language (TOEFL) is required, with a paper score of 550 or better; a computer score of 213 or better; or an internet-based score of 80 or better.

	Semester Units
Required Core Courses MTM 201, MTM 202, MTM 203, MTM 214, MTM 215, MTM 217 and MTM 290	21
Electives Complete three courses from: MTM 283, MTM 295, BUS 258, BUS 286, URBP 255, URBP 256, PADM 213, PADM 214	9
Total Units Required	30

Culminating Experience

The culminating experience is incorporated into MTM 290, Strategic Management in Transportation as an individual comprehensive project.

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 graduate course must repeat the course with a grade of "C" or better. In addition, any student whose GPA falls below 3.0 or receives two or more unsatisfactory grades ("C-", "D", "F", or "U") in graduate status, regardless of units completed, may be disqualified from the MSTM program. Disqualification requires students to complete a program of study for reinstatement with the graduate advisor and reapply for admission. It is the policy of the Donald and Sally Lucas Graduate School of Business not to readmit disqualified graduate students after a second disqualification.

Competence in Written English

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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape.

Transfer Credit

Subject to approval of the Donald and Sally Lucas Graduate School of Business Program Coordinator and validation by the Associate Vice President for Graduate Studies and Research, students may transfer a maximum of six units of related graduate course work from another AACSB accredited institution to satisfy elective course requirements. Grades in the transfer courses must be "B" or better. Extension course work from other institutions is not acceptable.

Other University Requirements

Students must comply with all other graduate requirements contained in this catalog.

Chemistry Department

College of Science

Duncan Hall 518
408-924-5000

Professors

Stephen E. Branz
David Brook
Elaine D. Collins
Marc d'Alarcao
Gilles Muller
Roy K. Okuda
Joseph J. Pesek
Maureen A. Scharberg
Herbert B. Silber
Karen A. Singmaster
Pamela C. Stacks
Bradley M. Stone, Chair
Daniel A. Straus

Associate Professors

Daryl K. Eggers
Resa Kelly
Roger H. Terrill

Assistant Professors

Lionel Cheruzel
Annalise Van Wyngarden

Curricula

BS, Chemistry
BS, Chemistry, Concentration in Biochemistry
BS, Chemistry, Concentration in Materials Science
BA, Chemistry
BA, Chemistry, Preparation for Teaching
Minor, Chemistry
MS, Chemistry
MA, Chemistry

Introduction

The Chemistry Department provides a strong educational background in chemistry and strives to show all students how chemistry is involved in solving everyday problems such as energy production, pollution control and disease prevention. Programs of study can be designed to give broad scientific experience to those interested in a general, liberal education; more specialized training is available to those wishing to pursue any of the health-related disciplines, science teaching, dietetics, engineering or other related sciences. A comprehensive course of study is suggested for career-oriented chemists. Except for those who will enroll in introductory chemistry courses, high school preparation should include chemistry, algebra, geometry and trigonometry.

At the baccalaureate level, students may specialize in biochemistry or materials science. At the graduate level, course work and research experience lead to either the MS or the MA degree in Chemistry. These degrees permit some specialization in analytical chemistry, biochemistry, inorganic, organic, radiochemistry, physical or polymer chemistry. The MS degree is recommended to those who wish to conduct or direct chemical research, or for those who want an introduction to graduate work before starting a PhD program. The MA is recommended for persons who are not directly involved in chemical research; it may be sufficient for those individuals teaching at the high school or community college level. Graduate courses also support the MA - Natural Science.

Undergraduate Advisement

Students wishing to major in chemistry should confer with one of the department advisors when entering the university. Students' goals will determine whether they opt for the BS or BA degree, with possible specialization in biochemistry, materials or preparation for teaching. Students who transfer into these programs should be aware that general chemistry and a number of supporting courses, especially the mathematics and physics requirements, should be started during their first two years. If students transfer at the junior level without most of these courses completed, more than four semesters at SJSU may be required to complete the degree.

All chemistry majors must meet with their advisors every semester. This mandatory advising session is necessary to remove the advising hold preventing registration for the following semester. At least one year prior to graduation, an approved major form must be signed by the advisor and submitted to the Chemistry Department Office.

Undergraduate Honors Program

Departmental honors are awarded to chemistry majors with a 3.5 GPA in required courses for the major and a 3.3 GPA overall, providing these students have completed CHEM 199.

Safety in Chemistry Laboratory Classes

Safety is an essential element of all chemistry laboratory classes. Because hazardous chemicals are essential and their use is common and necessary, safety instruction is an integral part of all chemistry laboratory classes. Materials Safety Data Sheets are available for review in the Chemistry Service Center. A formal course in Chemical Safety (CHEM 120S) is a prerequisite for all research course work (i.e., CHEM 180, 297, 298, 299, etc.), for all BS, BA, MS, and MA Chemistry majors and minors. BS majors with a concentration in biochemistry may substitute BIOL 6 for CHEM 120S.

Contact lenses in the chemical laboratory present a severe eye hazard. It is Chemistry Department policy that contact lenses are prohibited in all chemistry laboratories; prescription glasses should be worn instead. In addition, safety goggles are required in all laboratories.

Non-Compliance with Safety Rules

Failure to comply with proper procedures and prescribed safety cautions 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 self 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 his or her grade lowered, and may risk being withdrawn with a final grade of "F".

Prerequisites

Courses prerequisite to all chemistry courses must 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.

BS - Chemistry

This curriculum prepares students for graduate work in chemistry or for responsible positions in industrial or government laboratories. This degree 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.

Semester Units

General Education Requirements 39
Of the 51 units required by the university, 12 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Supporting Courses Required 25
MATH 030, MATH 031 and MATH 032 (10); PHYS 070, PHYS 071 and PHYS 072 (12); PHIL 133 (3)

Requirements in the Major 60

Required Core 29
CHEM 001A, CHEM 001B and CHEM 055 (14); CHEM 100W, CHEM 112A, CHEM 112B, CHEM 113A, CHEM 113B and CHEM 120S (15)

Additional Required Courses 22
CHEM 101, CHEM 130A, CHEM 145, CHEM 155, CHEM 161A, CHEM 161B and CHEM 162L

Capstone Course 3
CHEM 146

Science Electives 6
CHEM 114, CHEM 121S, CHEM 180 or other advisor approved upper division science electives

Total Units Required 126

Note: PHYS 050, PHYS 051, PHYS 052 and PHYS 053 may be taken in place of PHYS 070, PHYS 071 and PHYS 072.

BS - Chemistry, Concentration in Biochemistry

This concentration is designed for students interested in graduate work in biochemistry, medicine or related fields, or for responsible positions in industrial or government laboratories.

Semester Units

General Education Requirements 33
Of the 51 units required by the university, 18 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Supporting Courses Required 37
MATH 030, MATH 031 and MATH 032 (10); PHYS 070, PHYS 071 and PHYS 072 (12); BIOL 002, BIOL 003 and MICR 101 (12); PHIL 133 (3)

Requirements in the Major 54

Required Core 29
CHEM 001A, CHEM 001B and CHEM 055 (14); CHEM 100W, CHEM 112A, CHEM 112B, CHEM 113A, CHEM 113B and CHEM 120S (15)

Biochemistry Concentration 25

Required Courses 19
CHEM 130A, CHEM 130B, CHEM 130C, CHEM 131A, CHEM 161A and CHEM 161B

Capstone Course 3
CHEM 131B

Chemistry Electives 3
Approved upper division chemistry or biology

Total Units Required 126

Note: PHYS 050, PHYS 051, PHYS 052 and PHYS 053 may be taken in place of PHYS 070, PHYS 071 and PHYS 072.

BS - Chemistry, Concentration in Materials Science

This concentration is designed for students interested in graduate work in the fields of materials science or solid state chemistry, or employment in the electronics and storage industries or government laboratories.

Semester Units

General Education Requirements 33
Of the 51 units required by the university, 18 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Supporting Courses Required 28
MATH 030, MATH 031, MATH 032 and MATH 133A (13); PHYS 070, PHYS 071 and PHYS 072 (12); PHIL 133 (3)

Requirements in the Major 69

Required Core 29
CHEM 001A, CHEM 001B and CHEM 055 (14); CHEM 100W, CHEM 112A, CHEM 112B, CHEM 113A, CHEM 113B and CHEM 120S (15)

Materials Science Concentration 40

Required Courses 35
CHEM 130A, CHEM 145, CHEM 155, CHEM 161A, CHEM 161B, CHEM 162L, MATE 025, MATE 115, MATE 129, MATE 141 and MATE 153

Capstone Course 3-4
CHEM 199 (1), MATE 198A (2) or MATE 198B (2)

Upper Division Courses 1-2
Approved upper division electives in materials engineering or chemistry

Total Units Required 132

Note: PHYS 050, PHYS 051, PHYS 052 and PHYS 053 may be taken in place of PHYS 070, PHYS 071 and PHYS 072.

BA - Chemistry

This program 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, environmental monitoring, electronics, food processing, sales, pharmaceuticals, safety, literature search, or in a supervisory capacity in businesses dealing with chemical products.

The degree includes a minor selected in consultation with the advisor.

Semester Units

General Education Requirements 36
Of the 51 units required by the university, 15 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Supporting Courses Required 14
MATH 030, PHYS 002A, PHYS 002B and PHIL 133

Requirements in the Major 53

Required Core 34
CHEM 001A, CHEM 001B, CHEM 055, CHEM 100W, CHEM 112A, CHEM 112B, CHEM 113A, CHEM 113B, CHEM 160 and CHEM 120S

Approved Upper Division Electives 19
Students must complete at least three Upper Division lab courses, including at least one capstone course.</cstyle:>

Elective Lab Courses 4-6
Complete two courses from: CHEM 131A, CHEM 155, CHEM 162L

Capstone Course 3
CHEM 114, CHEM 131B or CHEM 146

Other Upper Division Chemistry Electives 10-12

Requirements in the Minor 15
Selected in consultation with advisor

Total Units Required 120

BA - Chemistry, Preparation for Teaching

This major is designed for students interested in teaching chemistry in high school or middle school. The following course work satisfies San José State University's requirements for a BA in Chemistry and prepares students for the California Subject Exams for Teachers (CSETs).

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 index) for information on application and admission to credential programs.

	Semester Units
General Education Requirements Of the 51 units required by the university, 18 may be satisfied by specified major and support requirements. Consult major advisor for details.	33
American Institutions Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.	(6)
Physical Education	2
Preparation for the Major and Supporting Courses PHYS 002A and PHYS 002B (8); MATH 030 (3); BIOL 001 and BIOL 002 or BIOL 020 and BIOL 021 (6) (8); GEOL 103 (3); ASTR 101, GEOL 105 or METR 112 (3); SCI 110 (3); SCED 175 (1); PHIL 133 (3)	30-32
Requirements in the Major CHEM 001A, CHEM 001B and CHEM 055 (14); CHEM 100W, CHEM 112A, CHEM 112B, CHEM 113A, CHEM 113B, CHEM 120S, CHEM 130A, CHEM 145, CHEM 155, CHEM 160 and CHEM 162L (32)	46
Capstone Course CHEM 114, CHEM 131B or CHEM 146	3
Electives Approved upper division chemistry electives	6
Total Units Required	120-122

Minor - Chemistry

	Semester Units
Required Core CHEM 001A, CHEM 001B and CHEM 120S	11
Electives 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; minimum of six units must be upper division courses)	12
Total Units Required	23

Graduate Admission Requirements

Admission to Classified Standing

In addition to the minimum requirements for admission to the Graduate Division outlined in this catalog, a minimum of 40 semester units in undergraduate chemistry is required. This should include two semesters of organic chemistry with lab (equivalent to CHEM 112A, CHEM 112B, CHEM 113A and CHEM 113B), one semester of quantitative analysis (equivalent to CHEM 55), and two semesters of physical chemistry (equivalent to CHEM 161A and 161B). A minimum chemistry GPA of 2.5 is required, but 3.0 is preferred. Those wishing to concentrate in biochemistry must also have completed two semesters of biochemistry lecture (equivalent to CHEM 130A and CHEM 130B) and lab (equivalent to CHEM 131A and CHEM 131B). Scores from the general GRE and two letters of recommendation are also required for admission.

Note: Applicants should contact the department regarding application deadlines, as they are not the same as the University deadlines.

Admission to Conditionally Classified Standing

Conditional classification may be granted to students who meet minimum requirements for admission to the Graduate Division but need additional course work to meet the minimum department entrance requirements outlined above, or for those with a chemistry GPA between 2.5 and 3.0. Transfer to classified standing is accomplished by petition after the deficiencies have been cleared.

Admission to Candidacy

Normally after about 20 units of course work are complete (including about 12 units of the 200-level chemistry lectures), the student can apply for Candidacy for the degree. In addition to the above, in order to apply for Candidacy the student must have Classified standing. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape. The 30 unit proposed program is written by the Graduate Advisor in consultation with the student and describes completed course work and course work planned for the future. This must include a minimum of 18 units of graded course work. The program must be approved by student's Research Advisor and Graduate Studies.

The student and the Graduate Advisor are notified in writing when the program is approved or denied. Students cannot enroll in CHEM 299 (Thesis) or apply for graduation until they officially are Candidates for a degree. Our department requires two units of CHEM 299 for Plan A. No excess 299 units are allowed.

Circumstances may arise that require a change in an approved program (e.g. the student wishes to substitute class for one on the approved program). Requests for such changes are made through the Graduate Advisor and must be approved by Graduate Studies.

MS - Chemistry

This 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.

Completing Requirements for the MS - Chemistry

The MS program will be designed to fit the individual vocational objectives of each student. The program shall include 30 semester units of work beyond the bachelor's degree.

Thirty units of course work must be chosen so that a minimum of 21 units are in chemistry of which at least 15 are 200-level graduate lecture courses, and 18 units must be graded course work.

A. Required: CHEM 120S (1 unit), 201 (1 unit), 285 (2 units), 291A-E (1 unit), 298 (4 units), 299 (2 units), 200-level lecture courses (15 units).

B. Approved electives (four units are required) chosen from the following:

1. Any 200-level chemistry course. (See the Chemistry Department Graduate Handbook for guidelines on 200-level courses within the proposed program.)

2. Any of the following chemistry courses if appropriate for the area of concentration and if approved by Graduate Advisor: CHEM 101, 114, 118, 121S, 126, 127, 130A, 130B, 130C, 131A, 131B, 135, 145, 146, 155, 159, 173, 196.

3. Upper division and graduate courses from departments other than chemistry (courses must be approved by Graduate Advisor prior to enrollment in such courses).

4. Master's Research Presentation (departmental seminar and final oral examination).

5. Submission of an M.S. Thesis approved by the student's research committee, and by Graduate Studies and Research.

The progress of each candidate will be reviewed periodically, and specific recommendations for further work will be made on the basis of such evaluations.

	Semester Units
Required Courses CHEM 120S (1); CHEM 201 (1); CHEM 285 (2); CHEM 291A, CHEM 291B, CHEM 291C, CHEM 291D or CHEM 291E (any of the 291 series taken for a total of 1 unit) (1)	5
Electives Any Chemistry graduate advisor approved 200-level Chemistry course (15-18); and/or any 100-level Chemistry graduate advisor approved course (1-4) including CHEM 101, CHEM 114, CHEM 118, CHEM 121S, CHEM 126, CHEM 127, CHEM 130A, CHEM 130B, CHEM 130C, CHEM 131A, CHEM 135, CHEM 145, CHEM 146, CHEM 155, CHEM 173.	19
Thesis or Project CHEM 298 (4) and CHEM 299 (2)	6
Total Units Required	30

MA - Chemistry

This degree is designed for persons who seek to augment and enhance their knowledge of chemistry beyond the bachelor's level. It is intended only for those who are interested in high school or community college teaching, technical librarianship, scientific writing or those with significant research experience currently employed in the industrial sector. It is not recommended for those who wish to conduct or direct chemical research without prior industrial research experience.

Completing the Requirements for the MA - Chemistry

The program shall include 30 semester units beyond the bachelor's degree.

The course and unit requirements for the MA are the same as those for the MS listed above, with the following exceptions:

1. A maximum of two units of CHEM 285 and/or CHEM 291A-E shall be applied toward the degree.

2. The four-unit CHEM 298 research project for the MS degree shall be replaced by an approved three-unit (CHEM 297) MA project.

3. The MA program shall include an advanced chemistry laboratory course (2-4 units).

4. Master's Project Presentation (departmental seminar and final oral examination).

5. Submission of an M.A. Thesis approved by the student's research committee and by Graduate Studies and Research.

	Semester Units
Required Courses *Maximum of 2 units of the following:* CHEM 285, CHEM 291A, CHEM 291B, CHEM 291C, CHEM 291D, CHEM 291E (any part of the 291 series may be taken twice) (2); CHEM 297 (3)	5
Electives Any Chemistry graduate advisor approved 100- or 200-level Chemistry course (19-21); one of the electives must be an advanced chemistry laboratory course (2-4)	23
Thesis or Project CHEM 299	2
Total Units Required	30

Child and Adolescent Development, Department of

College of Education

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Assistant Professors

John Jabagchourian
Nadia Sorkhabi

Curricula

BA, Child and Adolescent Development
BA, Child and Adolescent Development, Preparation for Teaching
Minor, Atypical Child Studies
Minor, Child and Adolescent Development
MA, Child and Adolescent Development

Introduction

The Child and Adolescent Development (CHAD) Department's interdisciplinary major provides students with a broad, liberal education with an emphasis on human development in infancy, childhood, and adolescence. Students interested in teaching and human services, generally, may choose this program. Graduates may pursue careers in teaching at any level from infant programs through post-secondary schools. Other careers available to graduates are in health, welfare, child care, and social service agencies. The Department operates a campus laboratory preschool which enrolls children from ages 2 through 5 in two programs: toddlers (age 2) and a multi-age group (ages 3-5).

The MA - Child and Adolescent Development is designed for students who wish to pursue advanced study in child and adolescent development for the following professional and/or academic purposes:

1. To obtain a graduate-level degree in child development;

2. To prepare for community college teaching in a child and adolescent development or early childhood education program;

3. To prepare for further study leading to a doctorate degree in child development; and

4. To acquire academic background in child and adolescent development to be applied in occupational positions that deal with youth and children's issues.

The degree is particularly appropriate for individuals who already possess entry-level credentials or licensing and wish to develop greater expertise and deeper knowledge about children and youth in order to advance in their careers or to prepare for new occupational options. This includes individuals such as professionals in human service agencies, Head Start and day care administrators, parent educators, child/youth advocates in social and legal arenas, child and family counselors, teachers in elementary, middle level and secondary schools, pediatric nurses, and professionals in public health and health care agencies.

BA - Child and Adolescent Development

This program provides a strong foundation in child development and could be the basis for graduate study in child development and related fields. Students who have declared Child and Adolescent Development as their major should meet with the Department advisor for consultation and approval of the program. Assigned advisor information is posted inside and outside of SH 201 and is listed on the department website www.sjsu.edu/chad/advising/.

	Semester Units
General Education Requirements	36-39
Of the 51 units required by the university, 12-15 may be satisfied by specified major and support requirements. Consult major advisor for details.	
American Institutions	(6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.	
Physical Education	2
Requirements in the Major	48
Lower Division Core	9
CHAD 060, CHAD 067 and PSYC 001	
Upper Division Core	30
CHAD 100W or LLD 100W (3); CHAD 101, CHAD 160, CHAD 161, CHAD 168, CHAD 169, CHAD 170 and CHAD 195 (21); CHAD 162 or CHAD 164 (3); CHAD 163 or CHAD 173 (3)	
Interdisciplinary Requirements	9
Education/Health: CA 177, PSYC 117, SOCI 177, HPRF 135, KIN 169, NUFS 114B	3
Community/Individual: ANTH 153, EDSE 102, EDSE 104, LING 129, PSYC 142, JS 136, JS 152, SOCI 1513	
Mathematical Concepts: Statistics and any additional B4 course	6
Electives or Minor	31-37
Courses selected with advisor approval from interdisciplinary requirements in the major or the preparation for teaching requirements. Recommended: CHAD 150, CHAD 151 and CHAD 167.	
Total Units Required	120

Note: The following Capstone courses, CHAD 160, CHAD 159 and CHAD 195 may be repeated only once.

BA - Child and Adolescent Development, Preparation for Teaching

This major is designed for students interested in teaching in elementary school or middle school. The following course work satisfies San José State University's requirements for a BA in Child and Adolescent Development. The SJSU pattern of Preparation for Teaching course requirements is designed for students who begin their college careers in this major. New students in this BA track should see a department advisor during the first semester of their freshman year for a list of the required courses. 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. This program is approved by the California Commission on Teacher Credentialing (CCTC) for diversified subject matter preparation.

Maintaining 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 index) for information on application and admission to credential programs.

Semester Units

General Education Requirements 6
Of the 51 units required by the university, 45 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Requirements in the Major 45

Lower Division Requirements 9
CHAD 060, CHAD 067 and PSYC 001

Upper Division Core 27
CHAD 100W or LLD 100W (3); CHAD 101 (3); CHAD 162 or CHAD 164 (3); CHAD 159 (3); CHAD 163 or CHAD 173 (3); CHAD 168, CHAD 169, CHAD 170 and CHAD 195 (12)

Interdisciplinary Requirements 9
Education/Health: CA 177, PSYC 117, SOCI 177, HPRF 135, KIN 169, NUFS 114B 3
Community/Individual: ANTH 153, EDSE 102, EDSE 104, LING 129, PSYC 142, JS 136, JS 152, SOCI 1513
Mathematical Concepts: Statistics and any additional B4 course 6

Requirements for Multiple Subjects Preparation Core Curriculum 66
See paragraph one above.

Electives 1

Total Units Required 120

Note: The following Capstone courses, CHAD 159 and CHAD 195, may be repeated only once.

Minor - Atypical Child Studies

Provides a solid foundation in both normative and atypical early childhood development. 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.

Semester Units

Required Courses 9
CHAD 060, EDSE 104 and EDSE 108

Electives 6
Complete two courses from: CHAD 161, CHAD 164, CHAD 168, EDSE 102

Total Units Required 15

Children's Center Instructor's Permit

Minor - Child and Adolescent Development

Semester Units

CHAD 060 and CHAD 067 (6); Complete three courses from: CHAD 150, CHAD 151, CHAD 160, CHAD 161, CHAD 162, CHAD 163, CHAD 164, CHAD 167, CHAD 168, CHAD 169, CHAD 170 (9) (15)

Total Units Required 15

A minimum grade of "C" is required in the courses taken for the minor.

Child and Adolescent Development Honors Program

Students may apply for the departmental Honors Program in Child Development if they meet the following criteria: completion of 9 units of upper division child development course work with a minimum GPA of 3.5, and completion of CHAD 101 or STAT 95 (or equivalent) with a grade of "A-" or better. Students who meet the entrance criteria will be awarded departmental honors by showing evidence of distinguished scholarly work as indicated by completion of a BA honors thesis (CHAD 199: Honors Thesis) or work leading to a published paper or presentation at a professional meeting, and a minimum GPA of 3.5 in all upper division child development courses.

MA - Child and Adolescent Development

Requirements for Admission

1. An application for admission to the university and an application for admission to the Child and Adolescent Development Graduate Program are required. Students must be admitted to both the master's degree program and the Graduate Division of the university. These require separate applications, and admission to one does not guarantee admission to the other. Contact the Office of Admissions and Records for information on application forms, procedures and deadlines for admission to the university. Application forms for the master's degree program are available in the Child Development Department office located in Sweeney Hall 201. The completed application form with accompanying materials should be sent to the Child and Adolescent Development Department Graduate Program Coordinator, San José State University, One Washington Square, San José, CA 95192-0075. Questions regarding MA programs may be directed to Dr. Maureen Smith, Graduate Advisor. The deadline generally is April 30 for admission to the fall semester.

2. A minimum 3.0 grade point average and a score on the Graduate Record Examination (GRE).

3. A score above 550 on TOEFL (international students only).

4. A 1-2 page statement of educational and professional background, and professional goals.

5. Three letters of recommendation from current or former professors and/or employers who can testify to the candidate's ability to pursue successfully an advanced academic degree. Letters should be sent directly to the Child and Adolescent Development Department Graduate Program Coordinator.

6. Transcripts of record from all college level institutions attended.

Requirements for Admission to Classified Standing

Applicants must meet all university Graduate Division admission requirements as well as those of the College of Education. College of Education requirements include a grade point average of 3.0 or higher during the last two years of undergraduate study, including work in the major.

Requirements for Admission to Candidacy for the Master of Arts Degree

To be admitted to candidacy for the Master of Arts degree, a student must first meet the all-university requirements for the degree as stated in this catalog, including successful completion of the Graduate English Writing Requirement. Applicants must also meet with a graduate advisor to plan a formal, 30-unit course of study, and successfully complete 9 units of course work in the department. The proposed graduate program must be approved by the Graduate Advisor and the Graduate Coordinator before the student may be considered a candidate for the MA degree.

Requirements for the MA - Child and Adolescent Development

With approval of an advisor, the minimum program for completing the 30-unit requirement is as follows:

	Semester Units
Core Courses CHAD 260A, CHAD 260B, CHAD 262, CHAD 266, CHAD 268 and CHAD 270	18
Thesis or Special Studies CHAD 299 (Plan A) or CHAD 298 (Plan B)	3
Elective Courses Nine units of upper division and graduate level courses are to be taken in consultation with an advisor.	9
Total Units Required	30

Candidates for the MA - Child and Adolescent Development may elect Plan A (Thesis) or Plan B (Project).

Plan A (Thesis)

Plan A requires a thesis and an oral examination. Thesis proposals must be approved by the graduate committee. Two advisors will be assigned to work with the candidate on the thesis, and the thesis committee must be a committee of three. Students enroll in CHAD 299, MA Thesis, for 3 units. Completion of the degree also requires a 3.0 GPA in all courses taken to meet the degree program.

Plan B (Project)

Plan B requires satisfactory completion of a project or research paper. These students enroll in CHAD 298, Special Studies in Child Development, for 3 units. Completion of the degree also requires a 3.0 GPA in all courses taken to meet the degree program.

Civil and Environmental Engineering Department

College of Engineering

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Laura Sullivan-Green

Curricula

BS, Civil Engineering
MS, Civil Engineering

Introduction

The mission of the Department of Civil and Environmental Engineering is to serve society, the public sector and private industry by

- providing undergraduate and graduate civil engineering education that prepares students to apply engineering knowledge to the diverse issues of resources, infrastructure and the built environment;
- contributing to the development and codification of knowledge through faculty scholarship, and;
- meeting the needs of working professionals for continuing education.

The program's educational objectives are broad statements that describe the career and professional accomplishments that the program is preparing the graduates to achieve.

In support of the department's mission, the department has developed the following program educational objectives:

- Function effectively as civil engineering professionals in industry, government or other organizations, designing, improving, leading and implementing efficient civil engineering practices.
- Provide solutions to engineering problems that account for economical, environmental, ethical, and societal considerations as well as professional standards, by applying acquired engineering knowledge.
- Apply their broad civil engineering education to effectively communicate civil engineering concepts orally and in written form.
- Utilize formal and information learning opportunities to maintain and enhance technical, personal and professional growth.

The undergraduate curriculum covers fundamental theory and practice in pertinent technical areas and develops students' skills necessary for professional employment or graduate school studies in their chosen fields. The course work stresses all aspects of civil engineering including construction, environmental, geotechnical, structural, transportation and water resources engineering. This technical expertise is combined with the ethical, legal, business and personnel problems in engineering and construction management. The BS CE program is accredited by the Engineering Accreditation Board of ABET, http://www.abet.org.

Active student clubs include the American Society of Civil Engineers, Associated General Contractors, Institute of Transportation Engineers, Water Environmental Federation, Association of Facilities Engineers and Chi Epsilon (honor society). These and other professional groups introduce students to career opportunities, jobs and trends in civil engineering. Through the clubs, students participate in a variety of regional and national competitions including design and construction of concrete canoes and steel bridges and wood bridges. Several student teams have won regional and national awards for their work.

Faculty, many of whom are licensed professional engineers; bring practical experience and real world examples into the classroom. We offer small classes, encouraging student-faculty interaction. Our professors have won college, university and national awards for the quality of their teaching and research. Classroom activities are supplemented by hands-on laboratories, field trips and guest speakers from local public agencies and private sector companies.

The Master of Science programs in Civil Engineering are intended to develop the high degree of professional competency and specialization required for the treatment of current engineering problems. Programs are offered in the specializations of construction management, environmental, geotechnical, structural, transportation and water resources engineering. Courses are scheduled in the late afternoon and evening to accommodate working graduate students.

Advisement

Each declared major in Civil Engineering is assigned to a specific academic advisor and is expected to maintain contact with that advisor and to obtain the advisor's approval of and signature on all required registration forms. Failure to secure an advisor's approval of a proposed class program may result in delays in graduation.

See the Engineering Preparation and Common Area Requirements section for details common to all engineering curricula.

All College of Engineering undergraduate majors are required to maintain a Major GPA of 2.0 or above. Major GPA includes all courses required for the major, including math, science and engineering.

BS - Civil Engineering

Semester Units

General Education Requirements 30
Of the 51 units required by the university, 21 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 29
MATH 030, MATH 031 and MATH 032 (10); MATH 133A (3); PHYS 070 and PHYS 071 (8); CHEM 001A (5); GEOL 002 (3)

Required for the Major 74

Engineering Common Area 27
CE 020, CE 095, CE 112, EE 098, ENGR 010, ENGR 100W, MATE 025, ME 101 and ME 111

Required Courses in Engineering 35
CE 008, CE 120, CE 121, CE 130, CE 131, CE 140, CE 150, CE 160, CE 162, CE 170, CE 181, CE 190 and CE 192

Additional Courses 12
Four courses from Civil Engineering electives approved by advisor. Two of the four elective courses must be approved design electives.

Total Units Required 135

**Taking both ME 020 and ME 030 would be used to satisfy CE 020.

Note: PHYS 050, PHYS 051 and PHYS 052 may be taken in place of PHYS 070 and PHYS 071.

Students must earn at least a 2.0 GPA in all approved courses taken in the Civil Engineering Department.

A semester-by-semester schedule for meeting these requirements is available in the department office and on the Civil and Environmental Engineering Web site at www.engr.sjsu.edu/civil/.

MS - Civil Engineering

Requirements for Admission to Classified Standing

In addition to meeting requirements for admission to the Graduate Division outlined in the Admissions section of this catalog, an applicant must have:

1. A bachelor's degree in civil engineering from a college or university offering a curriculum in civil engineering accredited by the Accreditation Board for Engineering and Technology (ABET); and

2. A 2.7 grade point average (basis 4.0) in engineering, mathematics and science course work leading to the baccalaureate.

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 admitted 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 Vice President for Graduate Studies and Research. This process is known as 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 which cannot be counted in the graduate degree program for the MS - Civil Engineering.

Details can be obtained from the department graduate coordinator.

Requirements for Admission to Candidacy

Students must meet the general all-university requirements for candidacy as outlined in this catalog. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape.

Completing Requirements for the MS - Civil Engineering

The curriculum for the MS - Civil Engineering requires completion of 30 semester hours of approved study, with a minimum of 15 units earned in 200-level civil engineering courses. Either Plan A (with thesis) or Plan B (without thesis) may be selected. Minimum requirements for each are:

Semester Units

Plan A (with Thesis) 30
Major Civil Engineering Area 15-18
Individual Research 3
CE 298
Thesis 3
CE 299
Electives 6-9
Chosen in consultation with an advisor

Plan B (without Thesis) 30
Major Civil Engineering Area 15-18
Approved Minor Area 6-9
Electives 6-9
Chosen in consultation with an advisor

Total Units Required 30

Eligible major civil engineering areas are:

- Construction Management
- Environmental Engineering
- Geotechnical Engineering
- Structural Engineering
- Transportation Engineering
- Water Resources Engineering

Acceptable areas for minor and electives are chosen in consultation with an advisor. Approved courses may include graduate courses and upper division elective courses in civil engineering and graduate or upper division courses in other university departments.

The university requirement for a final master's degree examination may be satisfied by a comprehensive examination or an independent study project (a minimum of 2 units of CE 298) with an oral examination. Details of these requirements may be obtained from the department. All students must demonstrate competency in written English.

Communication Studies Department

College of Social Sciences

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Shawn Spano
Federico Varona
Andrew F. Wood

Associate Professors

Marquita L. Byrd
Matthew Spangler
Anne Marie Todd

Assistant Professors

Kathleen McConnell
Priya Raman
David Terry

Curricula

BA, Communication Studies
BA, Communication Studies, Preparation for Teaching
Minor, Communication Studies
Minor, Communication in the Information Age
MA, Speech Communication

Introduction

The Communication Studies Department focuses on four curricular themes: democracy, diversity, technology, and globalization. Course offerings center on the nature of human communication; the role it plays in the creation, maintenance and advancement of a culturally diverse democratic society; and the ways in which technology facilitates or hinders communication among diverse populations in a democratic society and in a globalizing world. Faculty and students study and learn about communication as experienced in face-to-face spoken interactions, mediated messages, public rhetoric, the written word, signs and symbols, dialogues and relationships, and embodied speech.

The department offers the BA - Communication Studies. In fulfilling this major, our student-scholars come to understand the nature and use of language, symbolic processes, meaning and communication. They learn about these topics in interpersonal, group, public, organizational, multicultural, national, international and mediated contexts. Internships and service learning provide opportunities to apply both theoretical and practical knowledge.

The undergraduate major or minor integrates a broad cultural education in the liberal arts with communication skills and knowledge essential for any career. Students completing the BA - Communication Studies continue on to graduate study. Our majors and minors commonly enter career paths in education, sales, marketing and public relations, human resource development, law, politics, or community service agencies.

Communication Studies course work contributes to effective personal growth, citizenship and social relationships in multicultural organizations and communities, both locally and globally. Our courses are among those that satisfy the General Education requirements in oral communication; critical thinking; human behavior; self, society and equality in the U.S.; and written communications; as well as SJSU Studies Areas R, S, V and Z through COMM 168 - Global Climate Change.

Our graduate program (MA - Speech Communication) provides advanced study of communication theories, principles, and practices. Advanced study in speech communication is useful and recognized for both personal and professional development. For some, the MA enhances successful matriculation into doctoral programs in Speech, Communication, or related fields. The MA also prepares professionals to teach in community colleges. Our MA curriculum includes course work with career value for managers and administrators in communication-related professions, especially for professional contexts in a globalizing, intercultural world.

Undergraduate Advisement

All speech and communication majors must meet with an advisor prior to the end of their second semester and before registration for their third semester. Faculty advisors for all students, major and minor, can be located by contacting the Communication Studies office. Although major and minor programs are subject to the approval of both the advisor and chair of the department, the basic responsibility for developing a coherent program rests with the student.

Communication Studies

The department provides suggested programs and advice for students interested in emphasizing special areas of speech and communication, and for those wishing to combine courses in the major with relevant electives in other departments. Interdisciplinary interests are encouraged.

Semester Units

General Education Requirements 45
Of the 51 units required by the university, 6 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Requirements in the Major 42

Communication Studies Core 10
COMM 101C (4), COMM 198 (4) and COMM 199C (4)

Foundations Courses 8
Complete eight units from: COMM 110F, COMM 122F, COMM 130F, COMM 133F, COMM 144F, COMM 146F, COMM 149F, COMM 160F, COMM 161F, COMM 164F, COMM 170F, COMM 171F, COMM 172F, COMM 173F, COMM 175F, COMM 181F

Inquiry Courses 8
Complete eight units from: COMM 123I, COMM 145I, COMM 150I, COMM 151I, COMM 152I, COMM 155I, COMM 156I, COMM 169I

Practice Courses 8
Complete eight units from: COMM 105P, COMM 111P, COMM 114P, COMM 115P, COMM 116P, COMM 120P, COMM 121P, COMM 124P, COMM 125P, COMM 131P, COMM 140P, COMM 141P, COMM 147P, COMM 176P, COMM 182P

Additional Courses in the Major 8
Complete any two additional Foundation (F), Inquiry (I), or Practice (P) courses, or lower division COMM courses not used to meet Core GE requirements. Up to six units of SJSU Studies coursework in COMM may be used (COMM 100W, COMM 157, COMM 168, COMM 168W, COMM 174). No more than one unit of COMM 080 or one unit of COMM 091J may be used for elective credit in the major.

Electives 31
A minor is strongly recommended.

Total Units Required 120

COMM 182P recommended for students who plan to teach.

Additional Requirements for Graduation: COMM 101C is a prerequisite for COMM 198 and COMM 199C. No core GE classes may be double-counted in the major. Up to 6 units of SJSU Studies may be counted toward the major. CR/NC courses are limited to 6 units total.

BA - Communication Studies, Preparation for Teaching

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. In addition, this program is approved by the California Commission on Teacher Credentialing (CCTC) as subject matter preparation for a single subject credential in English.

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 index) for information on application and admission to credential programs.

	Semester Units
General Education Requirements	51
American Institutions	(6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.	
Physical Education	2
Preparation for the Major and Supporting Courses	27
ENGL 056A or ENGL 056B, ENGL 068A or ENGL 068B, ENGL 105, ENGL 112B, ENGL 125 and ENGL 144 or ENGL 145 (18); LLD 104 or LLD 163 and ENGL 103 or LING 107 (6); ENGL 161, ENGL 162, ENGL 163, ENGL 168 or ENGL 169 (3)	
Requirements in the Major	37-38
COMM 101C, COMM 182P, COMM 198 and COMM 199C; Complete two courses in Foundations Area, two courses in Inquiry Area, and either two courses in Practice Area, or one course in Practice Area and COMM 157	
Electives	2-3
Total Units Required	120

Minor - Communication Studies

	Semester Units
The courses which constitute a minor in Speech-Communication vary with the student's major. Special areas such as Pre-Legal Communication, Communication in the Helping Professions, Communication in Business, International and Intercultural Communication, Communication Criticism, and Communication Science can be emphasized. At least 12 of the 18 units must be upper division. (18)	
Total Units Required	18

Minor - Communication in the Information Age

This interdisciplinary minor Communication in the Information Age 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 (including content development, visual design, and website construction) for the purposes 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.

	Semester Units
Minor Requirements	7
MCOM 072 and COMM 181F	
Electives	11
Complete eleven units from: ARTH 072, ARTH 176A, COMM 131P, COMM 151I, RTVF 110	
Total Units Required	18

MA - Speech Communication

Requirements for Admission to Classified Standing

An applicant must first meet the requirements for admission to the university as set forth in this catalog. Admission as a classified graduate student in communication studies requires that the applicant present the following additional materials to the Graduate Coordinator:

1. At least two letters of recommendation attesting to the applicant's readiness for advanced academic study.

2. Evidence of the applicant's success in his or her undergraduate major. Normally, this would entail showing a 3.0 average (on a 4.0 scale) in upper division courses in the applicant's major.

3. Evidence of readiness for advanced study in communication studies as shown by either a bachelor's degree in the field or other appropriate course work. At a minimum, a student must present upper division course work in three areas: (a) introduction to the communication studies field and communication theory, (b) social behavioral-empirical research methods, and (c) rhetorical theory and criticism.

4. A personal statement (approximately 1000 words) addressing the candidate's reasons for wanting to pursue the MA in Communication Studies, her/his goals and expectations for graduate study, and her/his relevant professional and academic experience.

5. Current GRE General Test Scores.

Requirements for Admission to Conditionally Classified Standing

An applicant who does not meet all requirements for admission to classified standing may be admitted in a conditionally classified status. If the applicant's grade point average in his or her undergraduate major is below 3.0, the graduate coordinator may require additional undergraduate work in communication studies. If the applicant lacks courses necessary for successful graduate work in the department, the graduate coordinator will specify upper division courses necessary to remove any such deficiencies in preparation. Courses prescribed as preliminary to classified standing do not count as part of the 38 units required for the MA - Communication Studies.

Requirements for Admission to Candidacy

After completing a minimum of nine units of graduate work (with at least a "B" average), students may apply to candidacy for the MA - Communication Studies. Admission to candidacy requires:

1. An approved program of study consisting of 38 units, developed in consultation with the graduate coordinator and in conformity with university and departmental requirements.

2. Demonstration of competence in written English. The graduate coordinator will indicate which of the options for satisfying this requirement are appropriate for the student.

Core Requirements for the MA - Speech Communication

All approved programs of study must include: COMM 200R, COMM 203, COMM 204, COMM 205, COMM 206, COMM 294, COMM 297 and 2 units of COMM 204A, COMM 205A or COMM 206A.

Students may select additional courses, subject to the following requirements, for completion of the MA degree:

- At least 30 units must be on the graduate (200) level.
- At least 23 units must be graded (i.e., "A", "B", "C") work.
- At least 30 units must be taken in the Communication Studies Department.

Students will complete their total of 38 units of study (with a minimum average grade of "B") through Plan A (thesis) or Plan B1 (comprehensive examination), or Plan B2: (special project).

Semester Units

Plan A (Thesis) 38

Core Courses 14
COMM 200R, COMM 203, COMM 204, COMM 205 and COMM 206; Complete two units from: COMM 204A, COMM 205A, COMM 206A; COMM 294 and COMM 297

Electives 18
Approved 100- or 200-level courses. A student can take up to six C/NC units toward completion of the degree. Additional C/NC units must be approved by the graduate coordinator.

Thesis Work 6
COMM 299

Thesis Examination
Students will write and orally defend the thesis before a committee of at least three members approved by the departmental graduate committee.

Plan B1 (Comprehensive Exam) 38

Core Courses 14
COMM 200R, COMM 203, COMM 204, COMM 205 and COMM 206; Complete two units from: COMM 204A, COMM 205A, COMM 206A; COMM 294 and COMM 297

Electives 24
Approved 100- or 200-level courses. A student can take up to six C/NC units toward completion of the degree. Additional C/NC units must be approved by the graduate coordinator.

Comprehensive Examination
Students will complete and orally defend a written examination in at least three areas of the communication studies field. The examination will be supervised by a committee of at least three members approved by the department graduate committee.

Plan B2 (Special Project) 38

Core Courses 14
COMM 200R, COMM 203, COMM 204, COMM 205 and COMM 206; Complete two units from: COMM 204A, COMM 205A, COMM 206A; COMM 294 and COMM 297

Electives 20
Approved 100- or 200-level courses. A student can take up to six C/NC units toward completion of the degree. Additional C/NC units must be approved by the graduate coordinator.

Special Project (Write and Defend) 4
Students will write and orally defend a project before a committee of at least three members approved by the departmental graduate committee. The supervising committee may elect to involve a suitably qualified person from the community as part of the project and defense.

Total Units Required 38

Areas of Specialization within the Major

An MA - Speech Communication candidate may specialize in one or more areas of communication study.

- Communication and culture
- Communication and instruction
- Communication theory
- Computer mediated communication
- Group communication
- Intercultural communication
- Interpersonal communication
- Language and meaning
- Nonverbal communication
- Organizational communication
- Performance Studies
- Persuasion
- Public address and social movements
- Public deliberation and dialogue
- Reasoning and theory of argument
- Rhetorical theory and criticism

Many of the above areas overlap in content. While none of these is a formal concentration, each of these areas can be supported by several undergraduate and graduate courses in the curriculum and can help the student organize the plan of study.

Note: Because of changes in legislation, credential programs are under continual review during a transitional phase. Students should consult with advisors to determine current requirements.

Computer Engineering

College of Engineering

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Professors

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Harry Li
Sigurd Meldal, Chair
Haluk S. Ozemek
Simon Shim
Xiao Su

Associate Professors

Leonard P. Wesley
Weider Yu

Assistant Professors

Magdalini Eirinaki

Curricula

BS, Computer Engineering
BS, Software Engineering (Jointly with the Computer Science Department)
MS, Computer Engineering
MS, Software Engineering

Introduction

The Computer Engineering Department offers degree programs in Computer Engineering (BS and MS) and Software Engineering (BS and MS).

The mission of the Computer Engineering department is to be a leading provider of high quality, practice-oriented computer graduates to the nation, and to enhance engineering knowledge through research and scholarship. The department covers topics ranging from computer hardware design and embedded systems to software design and construction of computer networks for large-scale enterprise systems. Computer engineering students are expected to choose a set of elective courses to focus on a particular area of specialization.

Strategically located in the center of the Silicon Valley, the department provides students with advanced knowledge of hardware/software skills by integrating the latest technological developments in design, verification, implementation, and application of general-purpose and application-specific computer systems in the curriculum. Recent Computer Engineering graduates have obtained employment in local high-tech companies in hardware design and verification, hardware/software co-design, system software, Electronic-Design Automation (EDA) tool design, and product testing.

It is policy of the Computer Engineering Department that all students are required to have a laptop computer with software appropriate for use in their classes. A detailed and updated list of technology recommendations is available in the department office.

BS Computer Engineering

The B.S. program in Computer Engineering prepares students to enter the profession immediately after graduation or allows them to continue to graduate-level study. The BS CompE program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

All College of Engineering undergraduate majors are required to maintain a Major GPA of 2.0 or above. Major GPA includes all courses required for the major, including math, science and engineering.

A few years after graduation, we expect the students of this program to:

1. Be engaged in successful professional practice in their chosen discipline.

2. Demonstrate personal and professional leadership in their workplace and their community.

3. Demonstrate effective communication in an engineering environment.

4. Utilize formal and informal learning opportunities to maintain and enhance technical and professional growth.

MS Computer Engineering

The MS Computer Engineering program provides students with a world-class 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, prototyping and testing, as well as technical support and marketing.

The MS Computer Engineering program offers several areas of specialization including:

Embedded Systems

Students specializing in Embedded Systems receive balanced training in hardware and software development. Students take courses to obtain application-domain knowledge, then apply hardware/software co-design techniques and application software development skills for embedded applications in areas such as multimedia, graphics, computer networks, wireless communications, computer vision and robotics.

Secure Systems

Students specializing in Secure Systems learn key aspects of information security and privacy, from the fundamentals to advanced cryptography and authentication, computer and network security, and emerging security protocols and standards. They will understand security in a broad context and learn how security practice interacts with the law and public policy. They will practice how to defend against malicious attacks and build secure systems using the latest security tools and technologies.

Digital Hardware and Computer Architecture

Students specializing in Digital Hardware and Computer Architecture will master architecture and design including in-depth training in the latest methodologies and tools for design and verification of hardware functional blocks, application specific IPs, processors, and integrated complex hardware platforms containing all of these as building blocks at both the chip and board level.

Computer Networking

Students specializing in Computer Networking will study networking at all levels including network design and architecture, hardware and physical media, transport and application layer protocols, network programming and analysis. The specialization also covers advanced topics in network security, multimedia networking for mobile computing, and parallel processing.

BS Software Engineering

The goal of the BS in Software Engineering is the preparation of software engineers: professionals who develop software products on time, within budget and that meet customer requirements. The course work builds on computer science fundamentals and mathematical principles to cover the design, analysis, verification, validation, implementation, deployment, and maintenance of software systems. The program focuses on practical aspects of building and deploying real software systems in a socially responsible way.

The hallmark of the program provides the students with an educational experience that builds on traditional computer science and engineering, but distinguishes itself in the following ways:

- Courses emphasize the team approach to building software and provide leadership opportunities for every student.
- Courses place an emphasis on software processes and lifecycles.
- Courses include significant learning in management areas such as project planning, resource allocation, quality assurance, testing, metrics, maintenance, configuration management and personnel management.
- A degree that has a stronger emphasis on mathematics and use of engineering methods in software design.

The software engineering curriculum culminates in a year-long capstone sequence where the students work in teams to build a large software system. Students are encouraged to complete a co-operative education experience prior to enrollment in these courses, in order to gain some direct, industrial experience before embarking upon their own project.

A few years after graduation, we expect the students of this program to:

1. Be engaged in successful professional practice in their chosen discipline.

2. Demonstrate personal and professional leadership in their workplace and their community.

3. Demonstrate effective communication in an engineering environment.

4. Utilize formal and informal learning opportunities to maintain and enhance technical and professional growth.

The program is offered jointly by the Computer Engineering and the Computer Science departments.

See the separate write-up for BS Software Engineering for further information.

MS Software Engineering

The MS Software Engineering program provides the students with an educational experience that builds on traditional computer science and engineering, and then takes an integrative approach to software engineering. With the increased globalization of the software development workforce it is increasingly important that graduates understand developing technologies and architectures and their influence on software engineering processes, where large-scale design is pre-eminent, and where component integration is the standard mode of development.

Teamwork is emphasized throughout the curriculum to provide students with essential preparation for working in the industry.

Graduates with an MS in Software Engineering can expect to find significant opportunities in software design and development, management, and marketing.

The MS Software Engineering program offers several areas of specialization including:

Enterprise Software Technologies

The specialization provides an in-depth exposure to the latest technologies and trends in enterprise software development with a focus on study and research of distributed enterprise software architectures that employ multiple clients and scalable server-side technologies to develop high performance systems that scale across multiple tiers of servers. It prepares students for technical careers in infrastructure software and enterprise application development.

Software Systems Engineering

The specialization covers the software development life-cycle models, object-oriented analysis and design, design patterns, frameworks, software architecture, and software project management. It also provides coverage of the quantitative aspects of software engineering, including software metrics, software quality, software costs, and software reliability.

Networking Software

The specialization focuses on networking and distributed systems including network architecture and protocols, network programming and analysis, network security, multimedia networking, networking for mobile computing, network management agents, distributed operating systems, and the impact of networking on distributed systems.

Cloud Computing & Virtualization

The specialization covers the emerging technologies of Cloud Computing and Virtualization, their principles, the modeling, analysis, design and deployment, and industry-oriented applications. Major solution architectures and enabling technologies are covered.

The successful graduates are prepared for technical careers in developing applications and providing services that run on a distributed network using virtualized resources and that enables customers access to computing resources as needed.

Combined BS + MS degree

The Computer Engineering and Computer Science Departments offer an accelerated program for motivated, well-qualified students. The combined program allows BS Computer Engineering to progress toward the Master's degree in Computer Engineering while still undergraduates. The scheduling flexibility provided by the program enables students to complete the BS and MS degrees efficiently.

Eligibility

Students majoring in BS Computer Engineering are eligible to apply to the combined program if they meet the following minimum eligibility requirements:

- Junior or Senior status and completion of all lower division requirements and at least 12 upper division units of major courses.
- Meet a minimum GPA requirement of 3.0 in the major.
- Have not enrolled in senior project.

Participation in the program is based on prior academic performance and other measures of professional promise. Students are selected by a faculty committee.

Program of Study

Students in the combined program complete all courses required for the MS degree and all courses required for the BS degree except the senior project. Completion of the MS project or thesis satisfies the senior project requirement. The MS thesis/project must include a major design experience to complete the undergraduate degree.

In consultation with the graduate coordinator, graduate courses may be used towards the BS degree and also count towards the MS degree requirements. Upon completion of the program, students are awarded the BS and MS degrees at the same graduation ceremony and at the same time. Degrees are earned concurrently, not serially.

BS - Computer Engineering

Semester Units

General Education Requirements 24
Of the 51 units required by the university, 27 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 35
MATH 030 or MATH 030P (3); MATH 031, MATH 032 and MATH 042 (13); MATH 123 (3); PHYS 070 and PHYS 071 (8); CHEM 001A (5); CMPE 198 (3)

Required for the Major 73

Engineering Common Core 14
CMPE 030, ENGR 010, ME 019, EE 097 and EE 098 (11); ME 109 or MATE 153 (3)

Required Courses in Engineering and Science 50
CMPE 050, CMPE 102, CMPE 110, CMPE 124, CMPE 125, CMPE 126, CMPE 127, CMPE 130, CMPE 131, CMPE 140, CMPE 142, CMPE 148, CMPE 152, CMPE 195A, CMPE 195B, EE 101, ENGR 100W and ISE 130

Approved Upper Division Electives 9
Selected in consultation with the student's advisor

Total Units Required 134

MS - Computer Engineering

Requirements for Admission to Classified Standing

In addition to meeting requirements for admission to Graduate Division outlined in the Admissions section of this catalog, a student must possess a baccalaureate degree with a major in computer engineering and a grade point average of 3.0 (last 60 upper division technical units) or better from an ABET (Accreditation Board for Engineering and Technology) accredited computer engineering program.

Requirements for Admission to Conditionally Classified Standing

Applicants who do not have a baccalaureate degree in computer engineering but who meet university requirements for graduate admission and whose academic records or professional achievements give promise of satisfactory performance in graduate study in computer engineering may be admitted to conditionally classified standing. Applicants whose bachelor's degrees are not in computer engineering will be required to take additional courses which will not be counted in the graduate degree program for the MS - Computer Engineering. GRE General Test is required for those who do not have a bachelor's degree from an accredited university in the United States or Canada.

Program of Study

During the first semester of attendance the student must contact the graduate advisor. The graduate advisor and the student will prepare a study plan that the student will follow.

Completing Requirements for the MS - Computer Engineering

To meet the requirements for the MS - Computer Engineering, a student must complete 30 units of 200-level courses with a cumulative GPA of 3.0 or better. No undergraduate course counts towards the master's degree unless approved by the graduate advisor. At least 24 units must be 200-level computer engineering courses. Either Plan A (with thesis) or Plan B (without thesis) may be chosen. Minimum requirements for each are:

Semester Units

Plan A (with Thesis) 30

Common Core 9
CMPE 200, CMPE 220 and CMPE 240

Area of Specialization 9

Approved Electives 6

Thesis 6
CMPE 299A and CMPE 299B

Plan B (without Thesis) 30

Common Core 9
CMPE 200, CMPE 220 and CMPE 240

Area of Specialization 9

Project or Course-Only Option 12

Project Option 12

Approved Electives 6

Graduate Project 6
CMPE 295A and CMPE 295B

Course-Only Option 12

Approved Electives 12

Comprehensive Exam 0

Total Units Required 30

Students may further strengthen their degree by adding internships (CMPE 298I) to their program of study.

University Requirements

In addition to the above requirements, each student must satisfy all university requirements and procedures as stated in this catalog.

Competency in Written English for Graduate Students

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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape.

MS - Software Engineering

Requirements for Admission to Classified Standing

In addition to meeting requirements for admission to Graduate Division outlined in the Admissions section of this catalog, a student should possess a computer-related baccalaureate degree and a grade point average of 3.0 (last 60 upper division technical units) or better from an ABET (Accreditation Board for Engineering and Technology) accredited program.

Requirements for Admission to Conditionally Classified Standing

Applicants who do not have a computer-related baccalaureate degree, but who meet university requirements for graduate admission and whose academic records or professional achievements give promise of satisfactory performance in graduate study in software engineering may be admitted to conditionally classified standing. Applicants whose bachelor's degrees are not computer related will be required to take additional courses which will not be counted in the graduate degree program for the MS - Software Engineering.

Program of Study

During the first semester of attendance the student must contact the graduate advisor and gain approval for a study plan that the student will follow.

Completing Requirements for the MS - Software Engineering

To meet the requirements for the MS - Software Engineering, a student must complete 30 units of 200-level courses with a cumulative GPA of 3.0 or better. No undergraduate course counts towards the master's degree unless approved by the graduate advisor. At least 24 units must be 200-level software engineering courses. Students may further their degree by adding internships (CMPE 298I) to their program of study.

Three areas of specialization are defined in Software Engineering: **Enterprise Software Technologies, Software Systems Engineering, and Networking Software.** Details can be found on the department web site.

University Requirements

In addition to the above requirements, each student must satisfy all university requirements and procedures as stated in this catalog.

Competency in Written English for Graduate Students

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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape.

	Semester Units
Plan A (With Thesis)	30
Common Core (CMPE 202, CMPE 203 and CMPE 272)	9
Area of Specialization	6
Approved Electives	9
Thesis	6
Plan B (Without Thesis)	30
Common Core (CMPE 202, CMPE 203 and CMPE 272)	9
Area of Specialization	6
Project or Course-Only Option	15
Project Option	15
Approved Electives	9
Graduate Project (CMPE 295A and CMPE 295B)	6
Course-Only Option	15
Approved Electives	15
Comprehensive Exam	0
Total Units Required	30

Computer Science Department

College of Science

MacQuarrie Hall 208
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www.cs.sjsu.edu

Professors

Robert Chun
Cay S. Horstmann
Sami Khuri
Tsau Y. Lin
Sigurd Meldal
Melody Moh
Jon Pearce, Chair
Chris Huan-Chi Tseng

Associate Professors

Suneuy Kim
Teng-Sheng Moh
Christopher Pollett
Jeffrey D. Smith
Mark Stamp
David Taylor
Soon-Tee Teoh

Curricula

BS, Computer Science

BS, Software Engineering (Jointly with Computer Engineering Department)

Minor, Computer Science

Certificate, Unix Systems Administration

MS, Computer Science

Introduction

San José State University's location in the heart of Silicon Valley enhances greatly the opportunities for both the graduates and the students of the Department of Computer Science. Our graduates form a significant portion of the local technical workforce and our students often find work in local high tech companies. The bachelor's degree in computer science (BS-CS) is designed to give our graduates a solid foundation in the basic theories which underpin much of computer software technology as well as to prepare them to become productive software system designers. The program is accredited by the Computing Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET), 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, 410.347.7700.

The computer science faculty includes authors of standard texts in such areas as Java, C++, programming languages, compiler design, parallel processing, and web programming. Many of the faculty are also active in research, in a variety of areas such as computer architecture, network protocols, multimedia systems, and scientific computing.

There is a CS club which is usually very active. Just how active it is depends on the students-it's their club.

The department offers a BS degree in Software Engineering in conjunction with the Computer Engineering Department.

There is a master's degree program in computer science (MS-CS) as well; this program is for those students who wish to pursue their studies at a more advanced level. As many of the MS-CS students work in local industry, most courses are offered in the late afternoon or in the evening to accommodate their work schedules.

Entry Advisement

New students should check the Department web site at www.cs.sjsu.edu for information on first semester advising. Transfer and second baccalaureate students need to complete course equivalency forms with an advisor during the first semester in order to match prior college course work with stated major requirements. Students are also invited to visit the Department in MacQuarrie Hall 208. MacQuarrie Hall is adjacent to the Seventh Street parking garage.

Computer science at SJSU is a high unit major that does not allow room for many electives. Students planning to enter or transfer into this major should be aware that unless all of their courses count either toward the major or toward general education, they will require units in excess of the 121 officially needed to graduate.

Honors Program in Computer Science

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).

Computing Facilities

The department operates four computing laboratories. There is a drop-in lab designed to support course work in the department. This drop-in lab contains 17 Pentium 4 PCs running both Windows XP Professional and Linux (Fedora Core 5), and six Sun workstations running the Solaris (Version 9) operating system. These machines provide internet access and all of the applications, compilers, and tools (such as Eclipse and BlueJ) used in computer science classes taught by the department. The Sun machines are accessible via a secure shell client. Printing capability is provided by an HP LaserJet, with a per page charge payable to Spartan Shops. There are two closed labs used for classes. A fourth laboratory is an open lab for use, free of charge, by CS majors and is managed by the student CS club. This open lab contains several Pentium 3 and 4 PCs running Linux (Ubuntu version 6.0). Although no email service is provided in this lab, the Internet is accessible. The same software which is available on the Linux machines in the drop-in lab is available in this free open lab. This free open lab also provides workspace for students to study and/or use their laptops. All computers in the department are networked.

Students may obtain an account for use in both the drop-in lab and one of the closed labs by registering in CS 46A, CS 46B, or CS 110L, or by paying a semester fee. These student accounts include email, a home directory, shell/ssh access, and Internet access. Email is also used to augment office hours for students who find it inconvenient to go to a faculty member's office. Faculty often post homework assignments and announcements on their web pages and, in some instances, students can email homework to faculty.

Separate accounts for the second closed lab are automatically provided to students registering in any course which is taught in this lab and can only be used for those courses.

Wireless web access is accessible throughout the campus. Students are expected to have a laptop with wireless capability, or similar device. Financial aid for this purpose is available from the university; check the department office for details.

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.

Prerequisites for Computer Science Courses

Students enrolling in Computer Science courses who do not have the appropriate prerequisites may be dropped by the instructor. Students are advised to complete MATH 30, MATH 31, MATH 42, CS 46A, CS 46B and CS 47 before enrolling in upper division computer science courses.

Knowledge of Java is needed for students to succeed in upper-division Computer Science course work. Transfer students who arrive without knowing Java should take CS 49J. Students who receive grades of "C-" or better in CS 46A and CS 46B at SJSU should have sufficient Java for their upper-division courses. In particular, these courses give knowledge of Java equivalent to that of CS 49J for the purposes of satisfying the prerequisites for CS 146 and CS 151.

BS - Computer Science

This degree 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 Computer Science Program is accredited by the Computing Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET), 111 Market Place, Suite 1050, Baltimore, MD, 21202-4012, 410.347.7700. 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.

Semester Units

General Education Requirements 36
Of the 51 units required by the university, 15 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Support for the Major 33
MATH 030 (*) (3); MATH 031 (4); MATH 032, MATH 142 or MATH 161A (3); MATH 042 and MATH 129A (6); PHYS 050 or PHYS 070 (4); PHYS 051 or PHYS 071 (4); One additional science course (**) (3); CS 100W (3); PHIL 134 (3)

Requirements for the Major 50

Lower Division 14
CS 046A, CS 046B and CS 047 (11); CS 049C or CS 049J (3)

Upper Division 24
CS 146, CS 147, CS 149, CS 151, CS 152, CS 154 and CS 160 (21); CS 116B, CS 123B, CS 153, CS 157B, CS 158B, CS 161, CS 167B or CS 167C (3)

Elective Computer Science Courses Not Counted Above 12
At most 3 units of CS 180I may be used. Additionally, at most 3 units of CS 085 and CS 185 may be used. CS 180, CS 180H, and MATH 203 require prior approval.</cstyle:>
Complete at least 6 units from among: CS 116A, CS 116B, CS 122, CS 123A, CS 123B, CS 130, CS 134, CS 144, CS 153, CS 155, CS 156, CS 157A, CS 157B, CS 158A, CS 158B, CS 159, CS 161, CS 166, CS 167A, CS 167B, CS 167C, CS 174, CS 180I
Complete six units from: CS 072, CS 085A, CS 085B, CS 085C, CS 116A, CS 116B, CS 120A, CS 120I, CS 122, CS 123A, CS 123B, CS 130, CS 134, CS 143C, CS 143M, CS 144, CS 153, CS 155, CS 156, CS 157A, CS 157B, CS 158A, CS 158B, CS 159, CS 161, CS 166, CS 167A, CS 167B, CS 167C, CS 172A, CS 172B, CS 173, CS 174, CS 180, CS 180H, CS 180I, CS 185A, CS 185B, CS 185C, MATH 142, MATH 161A, MATH 162, MATH 171, MATH 177, MATH 178, MATH 179, MATH 203

Total Units Required 121

(*) The 5-unit course MATH 030P may be used in place of MATH 030.

(**) Permitted courses include GEOL 105, GEOL 107, GEOL 111, GEOL 112, METR 112, and METR 113. If a different course is chosen, it must count toward a science or engineering degree and 3 additional units of GE may be required.

The Support for the Major and Requirements in the Major sections must include at least 36 units of upper division mathematics and computer science course work, excluding CS 100W and CS 110L.

BS Software Engineering

The goal of the BS in Software Engineering is the preparation of software engineers: professionals who develop software products that are on time, within budget and that meet customer requirements. The course work builds on computer science fundamentals and mathematical principles to cover the design, analysis, verification, validation, implementation, deployment, and maintenance of software systems. The program focuses on practical aspects of building and deploying real software systems in a socially responsible way.

The hallmark of the program provides the students with an educational experience that builds on traditional computer science and engineering, but distinguishing itself in the following ways:

- Key courses in the Software Engineering program emphasize the team approach to building software and provide leadership opportunities for every student.
- These courses place an emphasis on software processes and lifecycles and include significant learning in management areas such as project planning, resource allocation, quality assurance, testing, metrics, maintenance, configuration management and personnel management.
- The degree has a stronger emphasis on mathematics and use of engineering methods in software design

The software engineering curriculum culminates in a year-long capstone sequence where the students work in teams to build a large software system. Students are encouraged to complete a co-operative education experience prior to enrollment in these courses, in order to gain some direct, industrial experience before embarking upon their own project. A few years after graduation, we expect the students of this program to:

1. Be engaged in successful professional practice in their chosen discipline.

2. Demonstrate personal and professional leadership in their workplace and their community.

3. Demonstrate effective communication in an engineering environment.

4. Utilize formal and informal learning opportunities to maintain and enhance technical and professional growth.

The program is offered jointly by the Computer Science and the Computer Engineering departments.

See the curriculum and other details in the Software Engineering Program section of the SJSU Catalog.

Minor - Computer Science

Semester Units

Math Support 3
MATH 042

Lower Division Computer Science 8
CS 046A and CS 046B

Upper or Lower Division Elective 3
MATH 030, CS 047, CS 049C, CS 072 or any permitted Upper Division elective

Upper Division Electives 6
Up to 3 units of CS 185A, CS 185B, and CS 185C can be used.</cstyle:>
Complete six units from: CS 116A, CS 116B, CS 122, CS 123A, CS 123B, CS 130, CS 134, CS 143C, CS 143M, CS 144, CS 146, CS 147, CS 149, CS 151, CS 152, CS 153, CS 154, CS 155, CS 156, CS 157A, CS 157B, CS 158A, CS 158B, CS 159, CS 160, CS 166, CS 167A, CS 167B, CS 167C, CS 172A, CS 172B, CS 173, CS 174

Total Units Required 20-22

At least 12 of units of the above must be distinct from the student's major. At least three units of upper division course work must be completed in the Computer Science Department 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.

UNIX Systems Administration Program

The department offers a certificate program designed to train UNIX System Administrators. The program is designed to provide a technical component to complement an MIS degree, broaden the skills of those who have training in software development or engineering, and provide new skills for persons seeking to enter a new profession. Contact the department office or check the Department web site at http://www.cs.sjsu.edu/ for details.

MS - Computer Science

This degree provides greater depth in computer science for more advanced positions in industry or teaching at the community college level. Check the Department web site at www.cs.sjsu.edu/mscs for details.

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, i.e., at least the breadth and depth of the SJSU BSCS 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

Students who meet the minimum requirements for admission to the Graduate Division can be conditionally classified if there is sufficient space in the program to accommodate them. Conditionally classified students will be required to complete undergraduate course work, as directed by the graduate coordinator.

Requirements for Admission to Candidacy for the MS - Computer Science

To be admitted to candidacy for the MS degree, a student must meet the all-university requirements as stated in the Academic Requirements section of this catalog. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape.

Completing Requirements for the MS - Computer Science

Plan A (with Thesis)

After being admitted to candidacy, the student must obtain a thesis director who then becomes his or her advisor. A committee consisting of the thesis director and two professors selected by the thesis director with the approval of the department chairperson, must approve the thesis topic before work begins. Registration in CS 299 should be for the semester in which the candidate expects to complete the thesis. 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.

Plan B (with Culminating Experience)

After being admitted to candidacy, the student must complete CS 298 (Writing Project), which includes the preparation and defense of a project under the direction of a faculty advisor and supervision by a committee of faculty members.

Electives

A list of permissible elective courses is published by the department. Courses which are not on this list must be approved by the graduate coordinator in advance. The elective units may include a maximum of 4 units of CS 180 and CS 280, and a maximum of 3 units of CS 180I.

	Semester Units
Option Courses	18
Complete six courses from at least three subject areas. Option courses and their subject areas are as follows.</cstyle:>	
Foundations: CS 252, CS 254, CS 255, CS 262, MATH 271A, MATH 271B, MATH 279A	
Architecture: CS 247, CS 258, CS 268	
Systems Software: CS 249, CS 253, CS 257, CS 267	
Software Engineering: CS 235, CS 240, CS 251A, CS 251B	
Specialty: CS 216, CS 223, CS 243A, CS 243B, CS 256, CS 265, CS 266, CS 274	
Elective Courses	6
Thesis or Writing Project	6
Select one of the following two options.</cstyle:>	
Plan A	6
CS 297 and CS 299	
Plan B	6
CS 297 and CS 298	
Total Units Required	30

No more than 6 units may be taken from outside the Department of Computer Science.

Creative Arts Program

College of Humanities and the Arts

Clark Hall 419
408-924-4481
creativearts.sjsu@gmail.com

Professors

Jennifer Rycenga
Karl E. Toepfer

Associate Professors

Susan Verducci-Sandford

Assistant Professors

Shannon Rose Riley

Curricula

BA, Creative Arts
BA, Creative Arts, Preparation for Teaching
Minor, Creative Arts

Introduction

The Creative Arts degree is a flexible and individualized program of study which helps students meet their own learning objectives and graduate on time. Students select Creative Arts core courses in combination with supporting courses in Art, English and Comparative Literature, Music and Dance, and TV, Radio, Film and Theatre. Courses are organized by category rather than by title or number. For example, majors may choose 6 units in studio/performing arts courses; 9 units in lower division history/theory courses; 12 units related upper division units from two departments; and 18 units of Creative Arts core courses. No two students take exactly the same program of study.

Most of our students also complete special senior projects or internships. Recent interns have been placed at Opera San José, the Children's Discovery Museum, San José Repertory Theatre, Camera Three, American Musical Theatre, the Institute for Contemporary Art, San José Museum of Art and in a variety of school and business settings.

Key to the CA Program is our emphasis on creative thinking and the creative process. While our students' ability to complete projects and products is expected, we are more concerned that students become critical, conscious and effective thinkers.

Our recent graduates have become successful visual and performing artists, teachers, art administrators, software developers, software engineers, physicians, writers, sound recording engineers, costume designers, arts therapists, multimedia designers, librarians and entrepreneurs. The Creative Arts Program at SJSU is the only one of its kind in the CSU system. Founded in 1956, this is a unique and well-established program.

BA - Creative Arts

Advisor: Shannon Rose Riley. M.F.A., Ph.D.

Semester Units

General Education Requirements 45
Of the 51 units required by the university, 6 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Requirements in the Major 45

Activity or Studio Courses 6

Six units of activity or studio courses in visual or performing arts or creative writing listed below or approved by the CAP Advisor</cstyle:>

ART 012, ART 013, ART 024, ART 026, DANC 040A, DANC 042A, ENGL 071, TA 005, TA 017, TA 048, a course in music (vocal or instrumental performance)

Lower Division Courses 9

Nine units of lower division non-studio, non-activity courses in history or theory in 3 disciplines 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</cstyle:>

ART 042, a course from ARTH 010 to ARTH 080, DANC 010, a course from ENGL 010 to ENGL 068B, ENGL 078, MUSC 010A, MUSC 012, MUSC 019, MUSC 081, RTVF 031, TA 010

Upper Division Coursesal courses (proposed to and approved by the CAP Advisor)

Twelve 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); and/or additional courses (proposed to and approved by the CAP Advisor)</cstyle:>

ART 110, ARTH 126, ARTH 197A, DANC 102, DANC 148, DANC 153, ENGL 112A-125A, ENGL 141-177, MUSC 110-124, RELS 121, RTVF 166, RTVF 181, RTVF 188, SPAN 120A, SPAN 120B, TA 120, TA 121, TA 127, TA 131

Creative Art Courses 18

CA 172, CA 173, CA 175, CA 176 and CA 178; Complete three units from: CA 121, CA 134, CA 139, CA 148, CA 150, CA 174 (may be repeated), CA 177, CA 180, CA 190

Electives 28

Total Units Required 120

To qualify for a baccalaureate in Creative Arts, a grade of "C" (2.0) or better is required in each of the following courses: CA 172, CA 173, CA 175, CA 176 and CA 178.

BA - Creative Arts, Preparation for Teaching

Advisor: Shannon Rose Riley, M.F.A., Ph.D.

This major is designed for students interested in teaching in elementary or middle school. The following course work satisfies San José State University's requirements for a BA in Creative Arts. In addition, this program is approved by the California Commission on Teacher Credentialing (CCTC) as subject matter preparation for diversified subject matter preparation.

Maintaining 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 index) for information on application and admission to credential programs.

Semester Units

General Education Requirements.....9-18
Of the 51 units required by the university, 33-42 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions.....(6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education..... 2

Requirements in the Major.....93-96

Reading, Language and Literature.....18
ENGL 001A, ENGL 001B and ENGL 112A (9); ENGL 103 or LING 107 (3); LING 108 and EDEL 108E (6) or CHAD 150 and CHAD 151 (6)

History and Social Science.....15
AAS 033A and AAS 033B (6) or HIST 015A and HIST 015B (6); GEOG 137, GEOG 138 and GEOG 139 (9)

Mathematics.....9
MATH 012, MATH 105 and MATH 106

Science.....12
BIOL 021, CHEM 035, GEOL 103 and SCI 110

Visual and Performing Arts.....9
CA 177 (3); Complete six units from: ART 039, ART 138, DANC 148, MUSC 010B, MUSC 185A, TA 167 (6)

Physical Education and Health..... 3-6
KIN 177 and EDTE 190 (6) or CHAD 149 (3)

Human Development.....3
CHAD 060 or CHAD 067

Creature Arts Core.....12

Performing or Arts Activity Courses..... 6
Performing or arts activity courses selected from classes such as ART 012, ART 013, ART 024, ART 046; DANC 042A; TA 005, TA 017, TA 048; course in music vocal or instrumental performance

Upper Division..... 6
Upper division courses in arts for children selected from ART 138, DANC 148, MUSC 185A, TA 167. Do not select any course used to meet the Visual and Performing Arts requirement (above) or more than one course from one arts area.

Depth of Study.....9
Integrated arts: Complete nine units from: CA 150, CA 175, CA 176, CA 177 (units for CA 177 are counted above under Visual and Performing Arts), CA 178

Advanced Writing.....3
CA 100W

Electives.....7-16

Total Units Required..... 120

Minor - Creative Arts

Semester Units

Three units of studio/activity courses in visual or performing arts or creative writing (3)

Six units of course work in arts disciplines from any two of the following departments/schools (three units in each): School of Art and Design, School of Music and Dance, TVRFT Department, English and Comparative Literature Department, Foreign Languages Department (literature only) (6)

CA 175 or CA 176 (3); CA 177 (for prospective teachers) or CA 178 (3); CA 172 or CA 173 (3) (9)

Total Units Required.....18

Design Department

College of Humanities and the Arts

ART Building 120
408-924-4343
http://ad.sjsu.edu

Professors

Brian Kimura, Chair
John Loomis

Associate Professors

Chang Sik Kim
John McClusky
Diana Seah
Randall Sexton
Leslie Speer

Assistant Professors

Connie Hwang
Virginia SanFratello

Curricula

BA, Art, Concentration in Design Studies
BFA, Graphic Design
BS, Industrial Design
BFA, Interior Design
Minor, Graphic Design
Minor, Interior Design

Introduction

San José State University is an accredited institutional member of the National Association of Schools of Art and Design.

The Design program is divided into three programs: Graphic Design, Interior Design and Industrial Design. A BA, Art with a concentration in Design Studies is also available. Admission is restricted and successful applicants must be capable of original work that draws upon the multidisciplinary offerings of the University.

All programs are supported and enriched by end of the year portfolio exhibitions in the school's Natalie and James Thompson Gallery and eight student galleries, as well as weekly public lectures. Exhibitions present contemporary and historical art, as well as work by faculty and students.

Advising

Students should work closely with an advisor to develop their individual courses of study. Final approval on major or minor program forms is to be obtained from a Design department advisor during the first semester of the student's junior year.

BA - Art, Concentration in Design Studies

Program for students who wish a broad-based study of graphic design principles, history and theory. The requirements will provide an understanding of the aesthetic as well as the technical skills needed to produce innovative design projects. Students are encouraged to combine their studies in design with electives in the arts and other fields. Careful planning and selection of courses in Support for the Major could allow a student to complete a program of study that would result in a BA, Art, Concentration in Design Studies and a Minor in Art History and Visual Culture. Consult departmental advisor for details.

	Semester Units
General Education Requirements	48
Of the 51 units required by the university, 3 may be satisfied by specified major and support requirements. Consult major advisor for details.	
American Institutions	(6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.	
Physical Education	2
Preparation for the Major	22
ART 001, ART 012, ART 013, ART 024 and PHOT 040 (13); ARTH 070A or ARTH 070C (3); ARTH 070B and ARTH 072 (6)	
Requirements in the Major	24
DSGD 083, DSGD 099, DSGD 104 and DSGN 197 (12); Departmental advisor-approved Upper Division design electives (12)	
Support for the Major	24
With approval of an advisor, select 24 units of upper and lower division support courses from art, art history, design, business, social sciences, technology and other related disciplines (at least 12 units must be Upper Division course work).	
Total Units Required	120

Professional Design Programs

The Department of Design offers professional programs in Graphic, Industrial, and Interior Design. The curricula of the three 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 three programs.

Admission Requirements for 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. Graphic Design students declare BA, Art, Concentration in Design Studies; Interior Design students declare BFA Interior Design; Industrial Design students declare BS Industrial Design. Passage through BFA Graphic Design, BFA Interior Design, and BS Industrial Design degrees is by portfolio review for enrolled students.

Portfolio reviews are held each semester for the following semester. Instructions are available in the Design department office. The following courses, or in some cases, their equivalent at another college via advisor approval, are required as preparation for the portfolio review.

- Graphic Design: ART 001, 012, 013, 024, PHOT 040, DSGD 083, 099, 104, 105.

Industrial Design: DSID 021, DSID 022, DSID 031, DSID 032, DSID 032A and DSGD 083 or 099.

- Interior Design: ARTH 072, DSIT 005, 010, 015, 029, 033, 034, 083, 088, 098, 102, 103 and DSGD 99.

BFA - Graphic Design

This program prepares students for intellectually and aesthetically challenging careers in Graphic Design by providing courses that emphasize theory and professional practice. The program concentrates on the organization and visual communication of information and includes typography, form and image, information architecture for traditional print media, as well as user interface, interactive design, and motion graphics for new media as a supportive part of the curriculum. Passage of two portfolio reviews is required for admission to the program. Passage of two Junior and two Senior Reviews is required to advance through the BFA GD program. BFA - Graphic Design students are required to complete a three-unit professional internship as part of their degree requirements.

Semester Units

General Education Requirements 48
Of the 51 units required by the university, 3 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 22
ART 001, ART 012, ART 013, ART 024 and PHOT 040 (13); ARTH 070A or ARTH 070C (3); ARTH 070B and ARTH 072 (6)

Requirements in the Major 57

Prerequisite for Admission to the Major 12
DSGD 083, DSGD 099, DSGD 104 and DSGD 105

Requirements in the Major 33
DSGD 102, DSGD 103A, DSGD 103B, DSGD 106 and DSGD 186 (15); DSGD 107A (9); DSGD 107B, DSGD 108 and DSGN 127 (9)

Upper Division Art History/Design History 6

Upper Division Art/Design/Photo Electives 6
With the approval of an advisor, select units of elective courses from art, art history, design history, business, social sciences, technology, and other related disciplines.

Support for the Major 3
PHOT 112 or PHOT 115

Total Units Required 132

BS - Industrial Design

Prepares students for a career in industrial design through a curriculum in design studio, theory and skill classes supported by courses in technology, business, science, art and humanities. Emphasis is placed on critical thinking, creative process management, aesthetic theory, communication skills and awareness of technological business as well as humanistic dimensions of product development. The program draws upon extensive resources of local, internationally prominent design firms and alumni. It emphasizes extensive exposure to professional practices. 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 and is accredited by NASAD (National Association of Schools of Art & Design).

Students declare an Industrial Design major without submitting a portfolio. However, the BSID program is highly structured and requires passing of four annual portfolio courses (DSID 32A, DSID 123A, DSID 125A, DSID 128A) as a prerequisite for the next level of studio courses. Students are advised to closely follow the recommended scheduling of the curriculum in order to complete the requirements in a timely manner. (Detailed instructions are available in the Design Department Office).

Semester Units

General Education Requirements 39
Of the 51 units required by the university, 12 may be satisfied by specified major and support requirements. The degree requirements also fulfill the C2 learning outcomes. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 12
ARTH 070B (3); ARTH 072 (3); PHIL 009 or PHIL 057 (3); PHYS 001 (3)

Support for the Major 6
Complete one course from: BUS 130, BUS 136, BUS 138, BUS 160 (3); PHIL 110 (3)

Requirements in the Major 73

Prerequisites for Admission to the Major 16
DSID 021, DSID 022, DSID 031, DSID 032 and DSID 032A (13); DSGD 083 or DSGD 099 (3)

Major Requirements 50
DSID 041, DSID 121, DSID 123 and DSID 123A (12); DSID 124 or DSID 130 (3); DSID 125, DSID 125A, DSID 126, DSID 129, DSID 136, DSID 137, DSID 143, DSID 176B and DSGN 127 (26); Complete nine units from: DSID 124, DSID 130, DSID 131, DSID 132, DSID 133, DSID 135, DSIT 107 (9)

Capstone Requirement 7
DSID 128 (6); DSID 128A (1)

Total Units Required 132

BFA - Interior Design

Students majoring in interior 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 and design. Preparation involves both theoretical and practical study of interior architecture with emphasis on critical thinking, communication skills, design process, merging technologies, human factors, aesthetic sensibilities, laws, codes and regulations, and professional ethics. A portfolio review is required for this program. All students in the Interior Design Program are required to complete a four-unit professional internship as part of their degree requirements.

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).

Semester Units

General Education Requirements 45
Of the 51 units required by the university, 6 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 12
DSIT 005, DSIT 010, DSIT 083 and ARTH 072

Support for the Major 12
ARTH 160 or ARTH 161 (3); ARTH 192C (3); DSGD 099 and DSGN 100W (6)

Prerequisites to Admission to the Major 21
DSIT 015, DSIT 029, DSIT 033, DSIT 034, DSIT 088, DSIT 102 and DSIT 103

Requirements in the Major 40
DSIT 098, DSIT 100, DSIT 101, DSIT 104, DSIT 105, DSIT 106, DSIT 107, DSIT 108, DSIT 109, DSIT 110, DSIT 111 and DSIT 112 (36); DSGN 127 (4)

Total Units Required 132

Student chapters of the American Society of Interior Designers (ASID) and the International Interior Design Association (IIDA) contribute to this professional program.

Minor - Graphic Design

	Semester Units
Preparation for the Minor	22
ART 001 (1); ART 012, ART 013 and ART 024 (9); PHOT 040 (3); ARTH 070A or ARTH 070C (3); ARTH 070B and ARTH 072 (6)	
Support for the Minor	6
PHOT 112 or PHOT 115 (3); DSGD 176A (3)	
Requirements in the Minor	12
DSGD 083, DSGD 099, DSGD 104 and DSGD 105	
Total Units Required	40

Minor - Interior Design

	Semester Units
Preparation for the Minor	12
DSIT 005, DSIT 010 and DSIT 083 (7); ARTH 072 (5)	
Requirements in the Minor	30
DSIT 015, DSIT 029, DSIT 033, DSIT 034, DSIT 088, DSIT 098, DSIT 100, DSIT 101, DSIT 102 and DSIT 103	
Total Units Required	42

Economics Department

College of Social Sciences

Dudley Moorhead Hall 147
408-924-5400

Professors

Doris Cheng
Tom S. Means, Director Economic Education Development
Lydia Ortega, Chair
J. Michael Pogodzinski
Yeung-Nan Shieh

Associate Professors

Jeffrey Hummel
Edward J. Lopez

Assistant Professors

Colleen Haight
Matthew Holian
Emily Skarbek

Curricula

BA, Economics
BS, Economics
Minor, Economics
MA, Economics
MA, Economics, Concentration in Applied Economics

Introduction

Economics studies the choices people make about production, exchange and consumption. Choices are necessary because resources are limited. The tools economists use to understand choices are highly versatile and can be used to explain business or market choices, as well as, examine choices made in family, political, historical, criminal, and educational situations. Using these economic tools, students learn to solve complex social, political, or business problems, to think strategically about the unintended consequences of actions, and to do scenario planning. Economics majors are noted for their problem solving ability for their ability to reach "reasoned" solutions to multi-faceted, complex problems. As a result, economics graduates are widely employed in public administration, in community, state and regional planning and other fields where sound decision making is required. Business firms, banks and other financial institutions also value the ability to evaluate market strategies and profit possibilities in economic planning and forecasting.

The BA - Economics is a general program, flexible enough to allow for a variety of student objectives. The BS is designed for those who plan to study economics at the graduate level, or to find jobs working as an economist or in closely related fields. Both programs have over 21 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.

The MA - The masters program prepares graduates for research and policy positions in government and business. Our teaching and research stress the importance of markets and institutions on political and socioeconomic outcomes. The emphasis on applied economics provides training in practical, problem-solving techniques appropriate for careers in teaching, private business, the public sector, banking, and consulting. Although we emphasize applied economics, we also guide students in the rigorous preparation necessary for doctoral programs at such universities as George Mason University, Washington University, Carlton University, Northwestern University, UC Davis, UC Santa Cruz, UC Irvine and Stanford University.

Honors Program in Economics

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; and must complete a supervised honors thesis. The prerequisite for enrollment in the honors thesis section of Econ 180 (Independent Studies) is completion of 100W. Thesis guidelines are available in the Economics Office.

BA - Economics

A general and flexible program to allow for a variety of student objectives. Each course used to satisfy the requirements for the major must be completed with a minimum grade of "C-".

	Semester Units
General Education Requirements	48
Of the 51 units required by the university, 3 may be satisfied by specified major and support requirements. Consult major advisor for details.	
American Institutions	(6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.	
Physical Education	2
Requirements for the Major	42
Required Courses	18
ECON 001A, ECON 001B, ECON 003, ECON 101 and ECON 102	
Area Courses	12
Select four courses from at least two of the following.</cstyle:>	
International Economics: ECON 112, ECON 136, ECON 158	
Financial Economics: ECON 135, ECON 137A, ECON 137B, ECON 139	
Public Policy Economics: ECON 121, ECON 132, ECON 141, ECON 151, ECON 166	
Quantitative Methods: ECON 103, ECON 104, ECON 138	
Economics Electives	12
Select 100-level courses within the Economics Department.	
Electives	28
A minor in a field recommended by the advisor is encouraged.	
Total Units Required	120

BS - Economics

Designed for those seeking a more quantitative study of economics. Each course used to satisfy the requirements for the major must be completed with a minimum grade of "C-".

	Semester Units
General Education Requirements	45
Of the 51 units required by the university, 6 may be satisfied by specified major and support requirements. Consult major advisor for details.	
American Institutions	(6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.	
Physical Education	2
Preparation for the Major	6
Each math course must be completed with at least a grade of "C".</cstyle:>	
MATH 070 (3); MATH 030 or MATH 071 (3)	
Requirements for the Major	25
ECON 001A, ECON 001B, ECON 003, ECON 101, ECON 102, ECON 103 and ECON 104	
Electives in Economics	18
Select 100-level courses within the Economics department.	
Electives	24
A minor in a field recommended by the advisor is encouraged	
Total Units Required	120

Minor - Economics

Semester Units

Lower Division Courses 8

Upper Division Courses 9

The department recommends that 9 units of upper division in the minor be taken in residence.

Total Units Required 17

Graduate Programs Admission

Requirements for Admission to Classified Standing

An applicant first must meet the requirements for admission to the university. In addition, the applicant should possess a 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 economic theory and statistics must be satisfactory (grades of "B" or better). An applicant should also be proficient in the mathematics of linear algebra and calculus to the level of at least Math 70 and 71.

Requirements for Admission to Conditionally Classified Standing

A student who does not meet all requirements for admission in classified standing for the MA Economics 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. Such admission will be conditional upon completing specific courses to correct the deficiencies listed by the graduate advisor on the admission notification. Upon completing these requirements the student must then petition for a change in status to classified standing.

Requirements for Admission to Candidacy for the MA - Economics

To be admitted 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:

1. 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.

2. Must obtain approval of a formal master's degree program from the departmental graduate advisor and from the University Graduate Committee.

3. Must have successfully completed the graduate English Writing Requirement. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape.

MA - Economics

At an appropriate time the student chooses, with the assistance of the graduate advisor, a proposed Master's degree program as outlined below.

Semester Units

Plan A (with Thesis) 31

Core courses: ECON 104, ECON 201, ECON 205A and ECON 205B 12

Additional core course: ECON 202 or ECON 235 3

Approved 100- or 200-level courses 12

ECON 299 4

Plan B (without Thesis) 31

Core courses: ECON 104, ECON 201, ECON 205A and ECON 205B 12

Additional core course: ECON 202 or ECON 235 3

Approved 100- or 200-level courses 15

ECON 298E 1

Total Units Required 31

MA - Economics, Concentration in Applied Economics

Semester Units

Core Courses 12

ECON 104, ECON 205A and ECON 205B (9); ECON 201 or ECON 206 (3)

Additional Requirements 10

ECON 103 or ECON 203 (3); ECON 121 or ECON 221 (3); ECON 232 and ECON 298E (4)

Electives 9

Approved 100- or 200-level courses

Total Units Required 31

Additional Requirements

Graduate Theory Grade Requirement

All master's degree students must complete a microeconomic theory course and macroeconomic theory or monetary theory course (if required) with a grade of "B" or better. Students must file for candidacy before taking the comprehensive examination.

Comprehensive Examination

Students who are not completing a thesis must pass a final written examination in the following three subjects: microeconomic theory, macroeconomic/monetary theory or Econometrics, and applied economics. Students register 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.

Competence in Written English

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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape.

Education - Communicative Disorders and Sciences, Department of

Connie L. Lurie College of Education

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Professors

Henriette W. Langdon
June McCullough
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Associate Professors

Michael L. Kimbarow, Chair

Assistant Professors

Wendy Quach
Pei-tzu Tsai

Curricula

BA, Communicative Disorders and Sciences
Minor, Speech Pathology
MA, Education, Concentration in Speech Pathology

Introduction

The Master's degree in Speech Pathology is accredited by the American Speech-Language and Hearing Association. All teaching credentials are accredited by the California Commission on Teacher Credentialing as well as the National Council on the Accreditation of Teacher Colleges.

The Kay Armstead Center for Communication Disorders, located in Sweeney Hall 115, provides speech language and hearing services for children, youth and adults in the community as well as SJSU students, faculty and staff.

Advisement Information

Prior to admittance into a specialist credential program a student must demonstrate subject matter competency by passing an approved subject matter competency examination or by completing a subject matter preparation program. A generic core of undergraduate courses and a grade point average of 3.0 are required for all credentials. CBEST is required for all specialist credentials. Each student is assigned an advisor who will assist in program planning. Major and minor programs are subject to the approval of both the advisor and the department chair.

BA - Communicative Disorders and Sciences

	Semester Units
General Education Requirements	51
American Institutions	(6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.	
Physical Education	2
Requirements for the Major	34-36
EDSP 110, EDSP 111, EDSP 112, EDSP 113, EDSP 120, EDSP 124, EDSP 161, EDSP 162, EDSP 177, EDAU 115, EDAU 170, EDAU 172 and EDAU 177	
Supporting Courses Required	9
EDSE 102 (3); HS 015, CHAD 060 or PSYC 102 (select with advisor's approval) (3); one statistics course (3)	
Electives	22-24
Selected in conference with advisor (may include a minor).	
Total Units Required	120

Minor - Speech Pathology

	Semester Units
EDSE 102, EDSP 110, EDSP 120, EDAU 115 and EDAU 170 (15)	
Total Units Required	15

MA - Education, Concentration in Speech Pathology

Advisors: Dr. Henriette W. Langdon, Dr. Michael Kimbarow, Dr. June McCullough, Dr. Jean Novak, and Dr. Wendy Quach

This field of emphasis enables students to broaden their knowledge and to increase their competency in the area of speech pathology. The goal is to provide clinical competency and to permit further graduate study for advanced degrees.

This program is accredited by the American Speech-Language-Hearing Association, the California Licensure Board of Medical Quality Assurance and the Commission on Teacher Credentialing of the State of California.

Programs may be individually planned to meet the student's interest in speech-language pathology.

Basic Requirements Prior to Graduate Studies

1. Show a background equivalent to that of a baccalaureate major in speech pathology.

2. Demonstrate an acceptable standard of oral and written skills.

3. Have an overall grade point average of 3.0 or better in undergraduate education.

4. Demonstrate suitability to the field as judged by faculty.

Required Course Pattern

	Semester Units
Speech Pathology	69
Core	30
EDSP 221, EDSP 222, EDSP 250, EDSP 251, EDSP 254, EDSP 255, EDSP 258, EDSP 259, EDSP 262 and EDSP 265	
Practicum	35
EDSP 269, EDSP 276, EDSP 277, EDSP 278 and EDAU 277 (the latter two courses may be repeated to meet practicum requirements, see departmental advisor)	
Master's Thesis or Option	4
Master's Thesis and Oral Presentation (4) or Comprehensive Examination (1) and Elective: EDSP 260, EDSP 264, EDSP 298, EDAU 273 (3)	
Total Units Required	69

A final master's comprehensive examination will be taken when students have completed the graduate course work. Confer with advisor.

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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape.

All students receiving a master's degree must accumulate a minimum of 375 clock hours in supervised clinical practicum in three distinctively different settings, and 25 hours of observation.

Education - Counselor Education, Department of

Connie L. Lurie College of Education

Sweeney Hall 404
408-924-3634

Professors

Lewis Aptekar
Xiaolu Hu, Chair
Andrew R. Hughey
Jason Laker

Associate Professors

Lisa Oliver, Graduate Coordinator

Assistant Professors

Dolores Mena
Caitlin Williams

Curricula

Credential, K-12 School Counseling Specialization
Credential, K-12 School Counseling Internship
Credential, School Child Welfare Attendance Specialization
MA, Education, Concentration in Counseling and Student Personnel

Introduction

The primary purpose of the program is to provide professional preparation in guidance, counseling and student personnel work. The graduate program encompasses both School Counseling Specialization Credential and Master of Arts degree programs.

Lower division and upper division students can select from the career guidance class, EDCO 004, to gain the skills needed for academic and career planning, and career orientation. EDCO 010 (Adjunct Learning) provides study skill strategies for selected majors.

Credentials

The three credential options available to candidates include the regular approved program for K-12 School Counseling Specialization credential, the K-12 School Counseling Specialization Internship credential and School Child Welfare Attendance Specialization credential. To qualify for the School Counseling Internship credential, candidates must be recommended by a school district and have passed the CBEST.

MA - Education, Concentration in Counseling and Student Personnel

The Master of Arts degree provides for the following professional specializations:

School Counseling

- Career and Education Development
- Crisis Management and Conflict Resolution
- Student Advocacy
- Alternative School Counseling
- Community Education Development
- Action-Centered Counseling and Consultation

Adult Counseling

- College and University Counseling and Student Personnel
- Career Development and Vocational Counseling
- Human Resource Development Training
- Transitions Counseling for Adults
- Psychodrama Methods and Training

The Master of Arts degree with the specialization in College and University Counseling and Student Personnel will qualify the candidate for the Community College Counseling requirements under SB 1725.

Advisement

San José State University is authorized to offer graduate programs leading to the Master of Arts in Education with a specialization in Counseling and Student Personnel and the School Counseling Specialization Credential. These programs are designed to prepare persons as counselors and/or consultants in human development services for schools and community colleges, business and industry, and community agencies and organizations.

Program flexibility permits the candidate to pursue the credential and the master's degree simultaneously in evening and weekend classes. However, the applicant needs to consider that:

- Admission to the university and selection in the Counselor Education Department are based on different criteria and require applications to the designated program and to the university.
- The master's degree and the credential areas are distinct from each other.
- The completion of the master's degree does not automatically provide a designated credential.
- It is possible to combine master's degree requirements with credential requirements. Further assistance or advisement can be obtained through the Counselor Education Department Office.

Requirements for Admission to Classified Standing

Applicants who meet the admission requirements for the Graduate Division and meet the further requirements of the area of specialization for the master's degree may be admitted to graduate classified standing.

Requirements for Admission to Conditionally Classified Standing

Applicants who meet the admission requirements for the Graduate Division but who fail to meet the requirements for classified standing in the area of specialization for the master's degree may be admitted to conditionally classified standing in the master's degree program. Individuals being admitted on this basis should contact Counselor Education for the specific prerequisites they must complete before being granted classified standing.

Requirements for Admission to Candidacy

A. Basic requirements. The student in Counselor Education must (1) see his/her advisor for any prerequisite courses that may be required and (2) complete a minimum of twelve units of Counselor Education courses, including EDCO 215, EDCO 218, EDCO 219, EDCO 227, EDCO 248, and/or other equivalent courses with a 3.0 ("B") grade point average prior to being considered for advancement to candidacy. Approval for all courses in the Counselor Education area is required.

B. Required areas. Because credential requirements are subject to legislative changes, specific course requirements may vary. However, students should complete approved course work in the following areas:

- Human Behavior and Development
- Student Development and Prevention
- Assessment and Research
- Law and Ethics
- Personal and Professional Development
- Communication and Group Relationship Dynamics
- School/Community Relations Dynamics
- Multicultural and Multiethnic Perspectives
- Career and Life-Span Transitions
- Organization Development
- Supervised Experience in Counseling

C. Requirements for master's degree candidates, including courses selected for a thirty-unit contract including:

- EDCO 221 Research Seminar in Education
- EDCO 289 Seminar in Professional Counseling
- EDCO 298 Special Studies for 3 units, or additional course work planned with approval of the advisor as necessary.
- EDCO 288 Seminar in Counseling Theory and Practice.

D. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape.

	Semester Units
Core Courses EDCO 221, EDCO 288, EDCO 289 and EDCO 298	12
Additional Courses 12 units of advisor-approved electives from: EDCO 227, EDCO 232, EDCO 244G, EDCO 268, EDCO 269, EDCO 279, EDCO 283, EDCO 286, EDCO 287 (12); 6 units from: EDCO 267, EDCO 280, EDCO 292, EDCO 293, EDCO 294	18
Total Units Required	30

Education - Educational Leadership, Department of

Connie L. Lurie College of Education

Sweeney Hall 219
408-924-3616

Professors

Mei-Yan Lu

Associate Professors

Noni Mendoza Reis, Chair

Assistant Professors

Maria Rebeca Burciaga
Terry Pollack
Arlando Smith

Curricula

Credential, Preliminary Administrative Services/Education, Concentration in Administration and Supervision

Credential, Professional Administrative Services

MA, Education, Concentration in Administration and Supervision

MA, Education, Concentration in Higher Education

Introduction

School leadership is very important work. If schools are to meet the needs of the increasingly diverse student population, leaders with passion for the importance of schooling and with the skills, attitudes and behaviors required to facilitate and manage school change will be in great demand. We know that approximately 50% of the school administrators in this region are expected to retire within the next five years. It is imperative that we work in collaboration to prepare teacher leaders to be successful school leaders in administrative positions. Faculty in the Educational Leadership Program at SJSU value the opportunity to support you and our schools in this effort.

Our MA - Education with an Emphasis in Administration and Supervision and the Preliminary Administrative Services Credential Program prepare teacher leaders to assume important leadership roles within our schools and districts. Many of our graduates are the principals, assistant principals, coordinators, directors, superintendents and assistant superintendents in our schools. The program is a credential program with an additional course and thesis for the MA. We do offer a Preliminary Administrative Services Intern Credential Program for candidates who are hired into positions requiring an administrative credential prior to completing all work for the preliminary credential.

The Professional Administrative Services Credential Program is designed for new school administrators. It is required of all new administrators and must be begun within twelve months of securing one's first administrative position. The emphasis within our program is on applying the theory stressed in the preliminary program to the practice our students find themselves involved with on a daily basis. Therefore, all courses focus on student selected, school focused change matrix projects. All students will have a school district mentor, a peer coach and a university supervisor. The intent is to support new administrators as they become increasingly effective school leaders.

The MA - Education with an Emphasis on Higher Education is a 30 unit program designed for people seeking leadership and management skills as they work in increasingly responsible positions within student service divisions of universities and community colleges.

Anyone interested in applying for admission to any of these programs is encouraged to call our Educational Leadership office.

Preliminary Administrative Services Credential

Basic Requirements to Earn Preliminary Credential

Applicants to the Preliminary Administrative Services credential must: possess a valid California teaching credential, Pupil Personnel, Health Services, Librarianship, or Clinical Rehabilitative credential; have at least three years of successful, full-time experience in the public schools, or in private schools of equivalent status; pass all parts of the CBEST exam; successfully complete the credential program; and two page writing sample, letter of recommendation from a supervisor attesting to probable success at the master's level and potential for leadership, and complete the portfolio exit process.

Recommended Preliminary Credential Course Pattern

	Semester Units
EDAD 200, EDAD 201, EDAD 202, EDAD 203, EDAD 204, EDAD 205 and EDAD 206; EDAD 242 or EDAD 242A (30)	
Total Units Required	30

An instructor may waive a course if a student demonstrates competency.

Professional Administrative Services Credential

Basic Requirements to Earn Professional Credential

Applicants to the Professional Administrative Services Credential Program must be currently employed in a position at least half time that is placed on the administrative salary schedule of the school entity.

New School Administrators must enroll in a Professional Credential Program within 12 months of obtaining an administrative position.

If a student completes the Preliminary Credential Program and wishes to continue directly into the Professional Program, no new application is required. If a student completes the MA Program (including the Preliminary Credential) and wishes to continue directly into the Professional Program a new application for admission to San José State University must be completed.

Recommended Professional Credential Course Pattern

	Semester Units
EDAD 270	
EDAD 275A	
EDAD 275B	
EDAD 275C	
EDAD 275D	
EDAD 285A	
Total Units Required	24

Admission Requirements

Admission to Graduate Standing, Classified

Applicants who meet the admission requirements for the Graduate Division and in addition meet the further requirements of the area of specialization for the master's degree are admitted to graduate standing. 3.0 GPA is required for entrance and exit.

Admission to Graduate Standing, Conditionally Classified

Applicants who meet the admission requirements for the Graduate Division but who fail to meet the requirements for classified standing in the area of specialization for the master's degree may be admitted to conditionally classified standing in the master's degree program. Individuals petitioning such admission should contact the chair for the specific prerequisites they must complete before receiving classified standing.

MA - Education, Concentration in Administration and Supervision

In addition to 36 units selected from the Preliminary Credential Program requirements, students pursuing the master's degree must complete the following:

	Semester Units
Core	33
EDAD 200, EDAD 201, EDAD 202, EDAD 203, EDAD 204, EDAD 205 and EDAD 206 ((21)) (21); EDAD 242 and/or EDAD 242A (12)	
Additional Courses	9
EDAD 221 (6) and EDAD 253 (3)	
Total Units Required	42

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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape.

MA - Education, Concentration in Higher Education

Students pursuing the MA with a concentration in Higher Education must complete the following:

	Semester Units
Introductory Courses	18
EDAD 200, EDAD 201, EDAD 203, EDAD 204, EDAD 205 and EDAD 206	
Elective Courses	6
Additional courses selected with the advisor	
Additional Courses	6
EDAD 221 and EDAD 253	
Total Units Required	30

Students who pursue Plan B - research paper/project in EDAD 253 - must also successfully complete the portfolio exit process.

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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape.

Education - Elementary Education, Department of

Connie L. Lurie College of Education

Sweeney Hall 305
408-924-3771

Professors

William Hanna
Judith Lessow-Hurley
Elba Maldonado-Colon, Chair
Nancy Lourie Markowitz
Rosalinda Quintanar

Associate Professors

Rocio Dresser
Roxana Marachi
Patricia Swanson
David Whitenack

Assistant Professors

Jolynn Asato
Colette Rabin
Grinell Smith

Curricula

Minor, Education

Credential, Multiple Subject

MA, Education, Concentration in Curriculum and Instruction

Introduction

The Elementary Education Program offers a MA degree for professional educators and students who wish to go on to doctoral studies. The department also offers a multiple subject credential for grades K-8 and a minor in Education for students in an undergraduate program.

Minor in Education

	Semester Units
EDEL 102, EDEL 103, EDTE 162 and EDTE 190 (12)	
Total Units Required	12

The minor in Education is available to students who are interested in education from a variety of perspectives. Students in a degree program who may want to work with children in capacities inside or outside the classroom may be interested in this minor. For example, students interested in the following career paths could benefit from this course of study: becoming a teacher, working in the non-profit sector (e.g., educational foundations) or in any type of child advocacy work such as law or social work; or anyone working in a diverse environment where understanding how individuals learn and process information could benefit. Successful completion of the minor will enable students to earn 12 credits toward their multiple subject teaching credential.

Multiple Subject Credential Program

The multiple subject credential leads to a license to teach in California schools. It is intended primarily for those who plan to teach at the elementary, middle or junior high levels. At San José State University, students complete programs in order to qualify for the Multiple Subject Credential.

Admission Requirements for the Multiple Subject Credential Programs

Admission requirements include the following:

- Admission to Graduate Studies at San José State University
- Grade point average (GPA), for last 60 units, of approximately 2.87
- Passing score on California Basic Education Skills Test (CBEST)
- Completion of preprofessional experience in a public school setting.
- Passing scores on the California Subject Examinations for Teachers (CSET) test
- Bachelor's degree
- Certificate of Clearance

Note: Applicants will be admitted conditionally and allowed to meet remaining admission requirements during the first semester of study. For example, seniors who have completed undergraduate major requirements, if accepted conditionally to the credential program, may begin credential program course work. Information is also available on the SJSU website, www.sjsu.edu/elementaryed/.

Professional Preparation Program Requirements for the Preliminary Multiple Subject Credential

Preprofessional course work leading to the Multiple Subject Credential meets requirements set by the California Commission on Teacher Credentialing. Course work for the Preliminary Credential includes theoretical foundations, studies supporting Cross-Cultural, Language and Academic Development with an optional bilingual emphasis, subject area methodology and student teaching practica. Courses with 200 numbers may apply toward an MA degree (see an MA advisor before completing the credential program).

Options are available for pursuing special interests within the Multiple Subject credential program such as progressing with a cohort, participating in school-based programs and earning a preliminary credential while working as an intern or under contract. Information is available in the Credential office (Sweeney Hall 108). You may discuss your interests for program planning with an advisor during the application process.

Multiple Subject with Bilingual Authorization

Students interested in adding a bilingual authorization in Spanish or Mandarin should contact the department office for an advising appointment and program availability.

MA - Education, Concentration in Curriculum and Instruction

The MA - Education with a concentration in Curriculum and Instruction is designed for professional educators interested in advanced study that may lead to service as a curriculum supervisor, curriculum developer, educational researcher, mentor teacher or similar educational position at elementary and middle school levels.

Requirements for Admission to the MA

1. An application for Admission to the university.

2. A Preliminary Teaching Credential.

3. A departmental application for admission. Application forms are available in the Department of Elementary Education Office located in Sweeney Hall 305 or on www.sjsu.edu/elementaryed/programs/master_of_arts/.

4. A 1-2 page statement of educational and professional background and professional goals.

5. Three letters of recommendation from current or former professors and/or employers who can testify to the candidate's ability to pursue successfully an advanced academic degree.

6. A minimum 3.0 grade point average (GPA).

7. A score above 550 or TOEFL (foreign students only).

8. Transcripts of record from all college level institutions attended.

9. Personal interview. Interviews are scheduled after an initial evaluation of the application materials.

The statement, three letters of recommendation, and the completed MA application should be sent directly to the Department of Elementary Education Graduate Coordinator.

Requirements for Admission to Classified Standing

Applicants must meet all university Graduate Division admission requirements as well as those of the College of Education. College of Education requirements include a grade point average of 3.0 or higher during the last two years of undergraduate study, including work in the major.

Requirements for Admission to Candidacy for Master of Arts Degree

To be admitted to candidacy for the Master of Arts degree, a student must first meet the all-university requirements for the degree as stated in this catalog. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at http://www.sjsu.edu/gape.

Applicants must also:

- Complete successfully 9 units of graduate course work in the Department of Elementary Education;
- 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.

The proposed graduate program must be approved by the graduate coordinator before the student may be considered a candidate for the MA degree.

Other Requirements

Contact the Department of Elementary Education for information on advisors for the MA - Curriculum and Instruction and the application process. Applications are available in SH 305. Information about MA options in Elementary and Middle Level Education is also available on the SJSU website (http://www.sjsu.edu).

	Semester Units
Core Courses Approved 200-level courses in research methods, foundations of education, and curriculum/instruction.	9
Thesis or Special Studies EDTE 299 (Plan A) or EDTE 298 (Plan B)	3
Elective courses At 100- or 200-level in the division or other departments, related to the candidate's career objective, chosen with the advisor's approval.	18
Total Units Required	30

Education - Interdisciplinary Courses

Connie L. Lurie College of Education

Introduction

The following interdisciplinary courses are offered by the College of Education to serve various majors throughout the university.

Education - Secondary Education, Department of

Connie L. Lurie College of Education

Sweeney Hall 301
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Professors

Roberta Ahlquist
Elaine Chin, Dean
Mark K. Felton, Chair

Associate Professors

Katya Karathanos

Assistant Professors

Brent Duckor

Curricula

Credential, Single Subject

Introduction

The Secondary Education department is the home of the Single Subject Credential Program. This credential is a license to teach in California middle or high schools. Prior to being admitted to the credential program, individuals must establish competency in a specific subject area by completing an approved undergraduate subject matter program or passing the state-approved CSET exam. Once admitted to the program, students must complete a minimum of 30 units of credential preparation course work. Individuals with an interest in the Single Subject program should contact the Secondary Education Office (Sweeney Hall 301) for information concerning prerequisites. Applicants are accepted for both fall and spring semesters. Internships are available. Courses are available to individuals admitted to the credential program or with permission of the Department Chair.

Credential Program

Requirements for Admission

Admission to San José State University

1. Grade point average of approximately 2.75
2. Passing score on California Basic Education Skills Test (CBEST)
3. Certification of Subject Matter Preparation/Competency
4. Passing score on the College of Education Technology Test
5. Satisfactory scores on the On-Site Writing Task
6. Completion of 45 hours of experience with adolescents in a public school instructional setting.
7. Letters of recommendation.
8. Certificate of Clearance
9. Satisfaction of the U.S. Government and Constitution requirement
10. Official Transcripts
11. Resume

Education - Special Education, Department of

Connie L. Lurie College of Education

Sweeney Hall 204 (Department of Special Education)
408-924-3700 (Voice)
408-924-3701 (Fax)
speceduc-group@sjsu.edu
http://www.sjsu.edu/specialed/

Professors

Ji-Mei Chang
Margaret Hughes
Hyun-Sook Park
Angela Rickford

Associate Professors

Chris Hagie, Chair and Intern Coordinator
Lou Larwood
Jennifer Madigan

Curricula

Minor, Atypical Child Studies
Minor, Deaf Education
Minor, Special Education
Certificate, Early Childhood Special Education
Certificate, Early Childhood Special Education (CCTC Approved Add-On)
Credential, Deaf and Hard of Hearing
Credential, Mild/Moderate Disabilities
Credential, Moderate/Severe Disabilities
MA, Education, Concentration in Special Education

Introduction

The Department of Special Education offers programs for the new Preliminary Education Specialist teaching Credentials from the California Commission on Teacher Credentialing (CCTC) in the areas of 1. Mild to Moderate Disabilities, 2. Moderate to Severe Disabilities, 3. Early Childhood Special Education, and 4. Deaf and Hard of Hearing, and a Master of Arts degree with an emphasis in special education. Students enrolled in the former programs leading to the Education Specialist Level I and Level II credentials will have opportunities to complete these programs. Eligible credential holders will have the opportunity for a program for the Special Education Autism Spectrum Disorder Added Authorization.

The department also offers an Early Childhood Special Education add-on certificate program for teachers who hold an Education Specialist Clear or Level II teaching credential, which allows them to teach infants, toddlers and preschool aged children with disabilities. The department offers programs for a minor in Special Education, Deaf Education and Atypical Child Studies.

The California Commission on Teacher Credentialing (CCTC) and the National Council on the Accreditation of Teacher Education Colleges (NCATE) accredit all teaching credential programs. CCTC identifies and defines the standards that all teachers must satisfy for the credential; students in the Department of Special Education programs meet these standards with completion of the program and then are recommended to CCTC for the Education Specialist credential.

Credential Programs Admission Requirements

1. Application for admission to SJSU.

2. Application and required documents for admission to the Department of Special Education.

3. Graduation from an accredited university or college.

4. Passing scores on the California Basic Education Skills Test (CBEST).

5. Grade Point Average (GPA) of 2.87.

6. Completion of pre-professional experience.

7. Passing scores on the California Subject Examination for Teachers (CSET).

8. Department interview with passing results.

9. Completion of 120 pre-service coursework hours for Interns.

10. U.S. Constitution requirement for Interns.

11. It is recommended that any individual interested in applying for a program attend an orientation meeting.

MA Program Admission Requirements

1. Application for admission to SJSU.

2. Application and required documents for admission to the Department of Special Education.

3. Graduation from an accredited university or college.

4. Grade Point Average (GPA) of 3.0.

5. Department interview with passing results.

6. A passing score on the Department of Special Education writing assessment.

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Minor - Atypical Child Studies

This interdisciplinary minor is offered under the Child and Adolescent Development Department and the Early Childhood Special Education Program in the Department of Special Education.

	Semester Units
Required Courses CHAD 060, EDSE 104 and EDSE 108	9
Elective Courses Complete two courses from: CHAD 161, CHAD 164, CHAD 168, EDSE 102	6
Total Units Required	15

Minor - Deaf Education

	Semester Units
EDSE 014A, EDSE 014B, EDSE 102 and EDSE 119 (12)	
Total Units Required	12

Minor - Special Education

	Semester Units
Required Courses EDSE 102 (3); EDSE 104 or EDSE 108 (3); EDSE 218A (3); EDSE 216A and EDAU 115 (3)	12
Total Units Required	12

Credential - Deaf and Hard of Hearing Programs

Preliminary Credential Program

	Semester Units
General Education Requirements EDEL 108D, EDTE 190 and 50 hours field work in general education setting	6
Special Education Core Requirements EDSE 102, EDSE 192A and EDSE 216A (9); EDSE 218A or EDSE 218B (3); EDSE 221, EDSE 224, EDSE 228A, EDSE 241 and EDSE 279 (16); EDSE 105 (Interns) (6); EDSE 180 (Interns) (2)	28-36
Deaf Education Specialization EDSE 119, EDSE 276C, EDSE 276D, EDSE 277 and EDSE 281	18
Total Units Required	52-60

Credential - Early Childhood Special Education

Preliminary Credential Program

	Semester Units
Special Education Core Requirements EDSE 102, EDSE 228A and EDSE 279	9
Specialization EDSE 104 and EDSE 108 (6); EDSE 154 (6); EDSE 214A, EDSE 218A, EDSE 221 and EDSE 235A (13); EDSE 105 (Interns) (6); EDSE 180 (Interns) (2)	25-33
Total Units Required	34-42

Special Education Added Authorization: Autism Spectrum Disorders

	Semester Units
Prerequisites Level II or Clear Education Specialist Credential K-12	0
Course Requirements EDSE 104 (3), EDSE 108 (3), EDSE 154 (6), EDSE 218A (3), EDSE 221 (3) and EDSE 235A (3)	22
Total Units Required	22

Credential - Mild/Moderate Disabilities

Preliminary Credential Program

	Semester Units
General Education Requirements EDEL 108D and EDTE 190 (6) and 50 hours field work in general education setting	6
Special Education Core Requirements EDSE 102, EDSE 192A, EDSE 218B, EDSE 224, EDSE 241 and EDSE 279 (18); EDSE 105 (Interns) (6); EDSE 180 (Interns) (2)	18-26
Specialization EDSE 215, EDSE 216A, EDSE 217A, EDSE 228A and EDSE 230A	18
Total Units Required	42-50

Credential - Moderate/Severe Disabilities

Preliminary Credential Program

	Semester Units
General Education Requirements EDEL 108D and 50 hours field work in general education setting	3
Special Education Core Requirements EDSE 102, EDSE 192A, EDSE 216A, EDSE 218A and EDSE 279 (15); EDSE 105 (Interns) (6); EDSE 180 (Interns) (2)	15-23
Specialization EDSE 154 (6); EDSE 206A, EDSE 213A, EDSE 214A and EDSE 235A (12)	18
Total Units Required	36-44

MA - Education, Concentration in Special Education

Advisors: Dr. Ji-Mei Chang, Dr. Chris Hagie, Dr. Margaret Hughes, Dr. Lou Larwood, Dr. Jennifer Madigan, Dr. Hyun-Sook Park and Dr. Angela Rickford.

This Program is a 30 unit program designed to prepare students for leadership roles in Special Education through a core curriculum and elective course work in areas of specialization: deaf and hard of hearing, early childhood special education, mild/moderate or moderate/severe disabilities, or a combination of areas of interest. Students interested in the MA and a teaching credential must apply for both options and attend an orientation to discuss possibilities.

Basic Requirements Prior to Acceptance

1. Admission to SJSU.

2. Grade Point Average (GPA) of 3.0 or better.

3. A passing score on the Department of Special Education writing assessment.

A teaching credential in special education is recommended.

Required Course Pattern

	Semester Units
Core EDSE 285 and EDSE 231 (must follow this sequence) (6); EDSE 218A or EDSE 218B (3)	9
Electives Electives to be chosen with the approval of the advisor.	18
Thesis or Special Studies EDSE 299 (Plan A: Thesis), EDSE 220 (Plan B: Completion Seminar) or EDSE 298 (Plan B: Special Project)	3
Total Units Required	30

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 “Competency in Written English” for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape.

At this time, only 6 graduate units (with a “B” or better) are transferable from other universities--they cannot be continuing education or extended studies units. All courses for the M.A. must be passed with a grade of “B” or better.

Electrical Engineering Department

College of Engineering

Engineering Building 349
408-924-3950

Professors

Tri Caohuu
Ray R. Chen, Chair
Sun H. Chiao
Chang Choo
Lili He
Ping Hsu
Thuy Le, Undergraduate Coordinator
Essam Marouf
Nader Mir
Gene Moriarty
Masoud Mostafavi
Peter Reischl, Graduate Coordinator
Avtar Singh
Udo J. Strasilla
Belle Wei, Dean

Associate Professors

Robert Morelos-Zaragoza
David Parent
Jalel Rejeb

Assistant Professors

Sotoudeh Hamedi-Hagh
Mallika Keralapura
Birsen Sirkeci

Curricula

BS, Electrical Engineering
MS, Electrical Engineering

Introduction

Electrical engineers are at the cutting edge of technological research and innovation in such areas as multimedia computing, global communications, and high-speed integrated circuits. Working at the forefront of these emerging industries allows electrical engineers to creatively push technology to the limits of physical and mathematical laws. There is no greater challenge for the creative mind. The Electrical Engineering Department welcomes all students who are ready for the challenge.

An electrical engineering degree from SJSU prepares you for an exciting career in designing, testing and manufacturing computer networks, microprocessors and computers, medical instrumentation and equipment, microwave communications, neural networks, speech recognition, ultrasonic imaging, video games and VLSI integrated circuits, to name a few.

Located in the center of Silicon Valley, graduates of the Electrical Engineering Department have successful careers at companies that are leaders in the technology field. In addition, students participate in internship positions in local industry, working side by side with engineering teams, gaining hands-on experience through extensive laboratory and field work.

Active student clubs such as IEEE (Institute of Electrical and Electronics Engineers) introduce students to career opportunities, jobs and speakers from the technology field.

Our faculty's interests represent a wide spectrum of research areas including digital signal processing, speech recognition, compression techniques, networking communications, microwaves, optoelectronics, ASIC, analog IC, mixed signal IC, digital systems, logic design, control, robotics, and wireless techniques. Because of close links with local industry, the Electrical Engineering Department laboratories represent some of the area's most advanced instructional facilities, providing up-to-date and state-of-the-art equipment.

Each student is assigned an advisor who interacts with the student on a one-to-one basis throughout his/her academic career. In addition, we have assigned general education advisors who guide the student in the selection of his/her general education courses.

The BS EE program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org. Students can move directly into the graduate program for careers in teaching, patent law, research and high-level engineering management. The graduate (MS) program provides advanced study in all areas of electrical engineering and offers five areas of specialization:

- Logic/Digital Systems Design
- ASIC/VLSI Circuits
- Analog/Mixed Signal IC
- Communications/Digital Signal Processing
- Networking

Following a careful review of its undergraduate curriculum, the Department of Electrical Engineering publishes the following set of program education objectives that are consistent with the mission of San José State University and the ABET General Criteria for Accrediting Programs in Engineering in the United States. These Program Educational Objectives were established by a group of EE Department faculty members who are also responsible for keeping these objectives up-to-date. The objectives were distributed to the following groups for feedback: EE faculty, industry representatives on the College's Engineering Industry Advisory Council and the Department's Advisory Committee, and students in the EE Senior Design course. Comments and suggestions were considered and incorporated into the present version of these objectives. Through the Department's assessment and enhancement process, the faculty evaluates and improves the program to ensure that it is meeting the following objectives:

- Be a practicing engineer in fields such as design, research, testing and manufacturing
- Engage in lifelong learning to maintain and enhance professional skills
- Fulfill the needs of society in solving technical problems using engineering principles, tools and practices, in an ethical and responsible manner
- Demonstrate leadership skills in the workplace and function professionally in a globally competitive world.

Advisement

Every electrical engineering student is assigned an electrical engineering major advisor to consult with on a regular basis. Each semester students must see their major advisor to approve their tentative class schedule for the following semester. An updated listing of faculty advisors is posted every semester on the bulletin board near the department office (Eng 349). Transfer students must consult an electrical engineering transfer advisor in order to receive credit for mathematics, physics, chemistry and engineering course work taken elsewhere. Students should bring transcripts, catalogs, etc., with them to facilitate the evaluation of their transfer credit. Students must have received a grade of "C" or better in ENGR 100W prior to enrolling in EE 124 or EE 198A. Note that ENGR 100W may not be waived based on Writing Skills Test (WST) scores. Every student must see an electrical engineering major advisor and submit a Major Form, delineating course objectives. An approved Major Form is due to the department office (Eng 349) by the 31st of March for the following year May graduation or by the 31st of October for the following year December graduation.

All College of Engineering undergraduate majors are required to maintain a Major GPA of 2.0 or above. Major GPA includes all courses required for the major, including math, science and engineering.

BS - Electrical Engineering

	Semester Units
General Education Requirements	30
Of the 51 units required by the university, 21 may be satisfied by specified major and support requirements. Consult major advisor for details.	
American Institutions	(6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.	
Physical Education	2
Preparation for the Major	30
MATH 030, MATH 031, MATH 032 and MATH 133A (13); PHYS 070, PHYS 071 and PHYS 072 (12); CHEM 001A (5)	
Required for the Major	70
Engineering Common Area	16
ENGR 010 and ENGR 100W (6); EE 097 and EE 098 (4); CMPE 046 (3); CHE 190 or ME 109 (3)	
Required Courses in Electrical Engineering	39
EE 101, EE 102, EE 110, EE 112, EE 118, EE 120, EE 122, EE 124, EE 128, EE 140, EE 198A, EE 198B and MATE 153	
Additional Required Course	3
EE 132 or EE 160	
Approved Upper Division Electives	12
Selected in consultation with the student's advisor	
Total Units Required	132

Note: PHYS 050, PHYS 051, PHYS 052 and PHYS 053 may be taken in place of PHYS 070, PHYS 071 and PHYS 072.

Students must complete the following courses with a "C" or better to graduate: EE 097, EE 098, EE 110, EE 112, EE 118, EE 122, EE 128, EE 198A, ENGR 100W, MATE 153. All other required courses in Engineering, Mathematics, Physics require a "C-" or better to graduate.

A semester-by-semester schedule for meeting these requirements is available in the department office, and on the department website at www.engr.sjsu.edu/electrical/.

MS - Electrical Engineering

Requirements for Admission to Classified Standing

To be admitted to classified standing, a student must possess a baccalaureate degree with a major in electrical engineering and a grade point average of 3.0 or better in the last 60 units, from an ABET accredited electrical engineering program.

Requirements for Admission to Conditionally Classified Standing

Conditionally Classified Graduate Students

Some applicants who do not qualify for Classified standing may be admitted as Conditionally Classified Graduate Students. They must petition for admission to the Classified Status after completing the common core graduate courses. A maximum of 15 units earned before the student attains the Classified Status may be counted towards the MSEE degree requirements.

Student with a BSEE Degree from an Accredited University in the USA:

A student with a BSEE degree from an ABET accredited university within the United States, whose GPA in the last 60 units are less than 3.0 but higher than 2.75 are required to submit his/her general GRE scores with the application. A student with minimum score of 650 in the quantitative part, 1100 quantitative + verbal score, and 3.5 in the analytical writing portion of the general GRE may be admitted as Conditionally Classified Graduate Student. Such a student may petition for admission to classified standing after successfully completing EE 210, EE 221, and EE 250 with "B" or better grade in each course.

Student with a BS degree in a field related to Electrical Engineering from an Accredited University in the USA:

A student who possesses a baccalaureate degree in a field related to Electrical Engineering, such as Physics, Mathematics, or another branch of Engineering with a minimum GPA of 3.0 in the last 60 units, a minimum score of 650 in the quantitative part, 1100 quantitative + verbal score, and 3.5 in the analytical writing portion of the general GRE may be admitted to Conditionally Classified Standing. Such a student may be required to complete four undergraduate courses. The four undergraduate courses are specified in the admissions letter and are selected from EE 118 (Digital Design I), EE 120 (Digital Design II), and EE 110 (Network Analysis), EE 112 (Linear Systems), EE 122 (Electronic Design I), EE 124 (Electronic Design II) and EE 140 (Principles of Electromagnetic Fields). Following the undergraduate courses, students must successfully complete the graduate core courses, EE 210, EE 221, and EE 250 with "B" or better grade in each course. He/ she may not enroll in more than two graduate courses before completing these requirements. Units for the undergraduate courses will not be counted for the MSEE degree unit requirements.

Students with Undergraduate Degrees from Foreign Universities

To be considered for admission to the MSEE program, all foreign students must have all of the following:

- a minimum score of 550 (paper based), 213 (computer based), 80 (internet based) in the TOEFL (Test of English as a Foreign Language).
- a minimum score of 650 in the quantitative part, 1100 quantitative + verbal score, and 3.5 in the analytical writing portion of the general GRE.
- a baccalaureate degree in Electrical Engineering with a minimum GPA (Grade Point Average) of 3.0 on a 0 to 4.0 scale in the last 60 semester units.

Students satisfying these requirements may be admitted as Conditionally Classified Graduate Students with the condition that they must complete the core graduate courses EE 210, EE 221, and EE 250 within the first 15 graduate units, with "B" or better grade in each of these courses.

Students from Other Graduate Programs within the University

A graduate student who has been admitted to another department in San José State University has to complete at least one semester of work in that department before asking for transfer to the Electrical Engineering Department. A minimum GPA of 3.0 in the last 60 semester units, minimum scores of 650 in the quantitative part, 1100 quantitative + verbal score, and 3.5 in the analytical writing portion of the general GRE is required. A "Change of Major Form" has to be first approved by the other department and the file transferred to the Electrical Engineering Department before the student may be considered for transferring into the Electrical Engineering program.

Credit for Courses Completed as an Undergraduate Student

A student in senior standing in Electrical Engineering may request award of Graduate Credit for courses taken as an undergraduate if all of the following apply:

- fewer than 14 units are still needed to complete the BSEE degree at San José State University.
- none of the courses to be taken for graduate credit is required for the BSEE degree.
- the student has a GPA of at least 2.5 on all work completed in upper-division standing at San José State University.
- the student does not enroll in more than 15 units for the term in which this work is taken.
- the student has completed the graduation check (Registrar's Office).
- the student agrees not to take letter-graded courses as CR/NC.
- the student agrees that not more than 6 units of graduate credit earned by this process be applied towards the Master's degree program.
- the student submits a "Request for Award of Graduate Credit for Units Completed as an Undergraduate" form and the Graduate Studies Office approves it at the beginning of the term in which the units concerned will be earned.

Requirements for the MSEE Degree

To meet the requirements for the MS - Electrical Engineering, a student must complete 30 units with a cumulative GPA of 3.0 or better. At least 24 of these units must be 200-level courses. The program provides two options: one taking MS project or thesis, and the other taking courses only followed by a comprehensive exam.

	Semester Units
Core Courses EE 210, EE 221 and EE 250	9
Area of Specialization	9
Options	12
Project/Thesis Option Approved electives (6); EE 297A (MS Project Proposal) (3); EE 297B (MS Project) or EE 299A (Thesis Proposal) (3); EE 299B (Thesis) (3)	12
Courses Only Option Approved electives (12); Comprehensive exam (0)	12
Total Units Required	30

Competency in Written English

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 “Competency in Written English” for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape.

Areas of Specialization

- Logic/Digital Systems Design
- ASIC/VLSI Circuits
- Analog/Mixed-Signal IC
- Communications/Digital Signal Processing
- Networking

Students desiring to pursue an area of specialization not listed above should consult his/her area advisor.

A coherent plan of study must be approved on the prescribed form by the area advisor and the graduate coordinator. Engineering or science courses outside of the area of specialization may be approved if they form coherent plan of study.

A maximum of six units of approved courses taken outside the Electrical Engineering Department may be applied toward the MS - Electrical Engineering degree.

Students opting for the courses-only option must also pass the required Comprehensive Exam (given once a semester) to earn the MSEE degree.

In addition to the above requirements, students must satisfy all university requirements and procedures as stated in this catalog.

Practical Training for MSEE Students

Students are expected to gain professional experience to prepare for and to support their culminating experience, e.g., by including 0-6 units of internship (EE 298I) in their plan of study.

Engineering - Preparation and Common Area Requirements

College of Engineering

Engineering Building 493

Introduction

College of Engineering Programs

The College of Engineering includes engineering, aviation and technology programs. Departments include Chemical and Materials; Civil and Environmental; Computer; Industrial and Systems; Electrical; Mechanical and Aerospace; Technology and Aviation. Each department offers a variety of programs which are identified in their respective parts of this catalog.

Preparation for Engineering Programs

To prepare for engineering, the high school student should take physics, chemistry, geometry, trigonometry and two years of algebra. Deficiencies in preparation can be made up by proper selection of college courses, although graduation may be delayed as a result. Students with deficiencies, particularly in mathematics, are urged to enroll in special make-up courses offered in the summer sessions.

In accordance with agreements of the Engineering Liaison Committee, students transferring from California community colleges will be given junior level standing if they have successfully completed the following course work:

- 12 semester units of mathematics including 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

In addition, they may be given credit for mathematics, science and engineering units beyond the minimal which are acceptable to their chosen department. Graduation following two academic years of study is possible if the student satisfactorily completes the upper division course work required by the department, has no major deficiencies, and proceeds at a reasonable pace.

Preparation for Technology and Aviation Programs

To prepare for technology and aviation, the high school student should take industrial technology classes such as electronics, drafting, and manufacturing, and should complete courses in physics, chemistry, geometry, trigonometry, and algebra. Deficiencies in preparation can be made up by proper selection of college courses, although graduation may be delayed as a result. Students with deficiencies will have to take additional course work.

Specific preparation requirements for programs in Aviation and Technology vary, but a solid grounding in technology subjects, mathematics, chemistry, physics, and computer technology is recommended. For specific requirements, please turn to the departmental sections of this catalog.

Community College Preparation

Community college students are urged to complete as many of the lower division requirements in chemistry, physics, mathematics and engineering as possible at the community college. The College of Engineering faculty has the authority to determine equivalencies for courses proposed for degree credit. Course work taken by correspondence and/or extension while a student is disqualified from any college or university may not be applied to an engineering degree unless specific prior permission is granted in writing by the Dean of the Engineering College. The University website provides details on transferable units. The website address is: http://transfer.sjsu.edu/

Unit requirements in the various engineering and technology majors range from 129-135. Students who are not properly prepared in high school or who take elective courses in excess of the number of free electives will require additional units.

A maximum of 4 to 6 semester units of credit toward a Bachelor's degree in Engineering, Aviation or Technology may be earned in individual studies (180) course, subject to approval by the student's academic advisor. Students shall complete all departmental requirements and, while in residence at the University, shall complete not less than 24 upper division semester units in the major department.

Academic Performance Requirements

All College of Engineering undergraduate majors are required to maintain a Major GPA of 2.0 or above. Major GPA includes all courses required for the major, including math, science and engineering.

Requirements are slightly different in engineering and technology programs. For requirements in Aviation and Technology, please turn to the respective department chapters in this catalog. Engineering requirements are as follows: to be cleared for graduation in an engineering program by the Dean of the College of Engineering, a student must earn:

- A minimum 2.0 GPA in all required courses for the major
- A minimum 2.0 GPA in all required courses and technical electives combined
- A minimum 2.0 GPA in all required courses and technical electives taken at San José State University

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 remainder of this section applies to engineering programs specifically. For information on programs and requirements in Aviation and Technology, please refer to the appropriate sections of this catalog.

Enrollment in all engineering courses is limited to those majors for whom the course is required or is an approved elective. Undergraduate students in an undeclared major status and those students in postbaccalaureate unclassified standing cannot enroll in courses in the College of Engineering without permission

Upper Division Status in Engineering

The College of Engineering classifies all of its students as freshmen or sophomores until they have satisfactorily completed the following lower division engineering preparatory work:

- 12 units of calculus excluding differential equations
- 10-12 units of university level physics (with calculus as prerequisite)
- 5-10 units of university level chemistry
- 10 units of lower division engineering (introduction to engineering, computers, statics, electrical circuits, and materials)

University and College of Engineering Common Area Undergraduate Requirements

The common objective of the various engineering curricula is to provide the graduate with the basis for assumption of technical and social responsibilities shared by all members of the engineering profession. To accomplish this objective, all engineering curricula require that the student complete a common area of course work in general education, science and engineering. Specialization within a field of engineering is attained through taking specified and elective course work that is detailed in the departmental sections of this catalog.

General Education Requirements

Of the 51 units required by the university, 18-21 may be satisfied by specified major and support requirements. Engineering majors may satisfy the remaining 30-33 units as follows:

Core GE: The mathematics and science portions are satisfied by required major courses. Engineering students taking core GE at SJSU may satisfy remaining requirements by taking either HUM 1A-B and HUM 2A-B (24 units) or AMS 1A-B (12 units), ENGL 1A-B (6 units), Oral Communication (3 units) and Human Understanding (3 units). Transfer students may satisfy core GE through the IGETC or CSU breadth requirements.

Advanced GE: Engineering majors may satisfy advanced GE with 9 units: 3 units of ENGR 100W, 3 units of a GE course in Area S, and 3 units of a GE course in Area V. Consult advisor for details.

Graduate Programs Offered

The College of Engineering offers graduate work leading to Master of Science degrees in:

- Aerospace Engineering
- Chemical Engineering
- Civil Engineering
- Computer Engineering
- Electrical Engineering
- Engineering (Interdisciplinary) Program
- Industrial and Systems Engineering
- Materials Engineering
- Mechanical Engineering
- Quality Assurance (Department of Technology)

There are environmental engineering emphases available within the programs in chemical engineering and civil engineering.

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. Students desiring to develop interdisciplinary specializations not evidently available in departmental programs are encouraged to make proposals to the appropriate department chair or the College Dean.

The Master of Science in Engineering offered by the Engineering Department 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.

The College of Engineering requires that all students whose native language is not English achieve a minimum score of 550 on the TOEFL examination. 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 admission to candidacy for the specific degree in engineering.

Unclassified students cannot enroll for any course in the College of 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Studies and Research website at www.sjsu.edu/gradstudies. In addition, all graduates must complete an acceptable thesis, project or comprehensive examination.

English and Comparative Literature

College of Humanities and the Arts

Faculty Offices 102
408-924-4425
www.sjsu.edu/english

Professors

Robert Cullen
Paul Douglass
John Engell, Chair
Jonathan Lovell
Samuel Maio
David Mesher
Linda Mitchell
Manjari Ohala
Scott B. Rice
Susan Shillinglaw
Alan Soldofsky
Nancy P. Stork
William A Wilson

Associate Professors

Angela Noelle Brada-Williams
Balance T.P. Chow
Bonita Cox
Andrew Fleck
Persis M. Karim
Revathi Krishnaswamy
Mary Warner

Assistant Professors

Andrew Altschul
Adrienne Eastwood
Catherine Gabor
Katherine Harris
Cathleen Miller
Nicholas Taylor

Curricula

BA, English
BA, English, Concentration in Career Writing
BA, English, Concentration in Creative Writing
BA, English, Preparation for Teaching (Single Subject)
Minor, Literature
Minor, Comparative Literature
Minor, Creative Writing
Minor, Professional and Technical Writing
MA, English
MFA, Creative Writing
Certificate, Professional and Technical Communication

Introduction

English majors enter a wide array of careers, including teaching, technical writing, graduate programs in English, Law, and Medicine, and industry. The English and Comparative Literature Department offers programs of study in English, American, World, and Comparative Literature, and in Creative and Professional Writing. Sophisticated critical abilities and a knowledge of culture are the hallmarks of our program's graduates. The department offers a BA in Literary Studies as well as BA with concentrations in Creative Writing and Career Writing and a BA in Preparation for teaching English. It also offers an MA degree that develops further the literary, critical, and creative abilities of students who want to go on to teaching careers or doctoral studies. The Master of Fine Arts in Creative Writing trains professional writers in the history and craft of poetry, creative nonfiction, fiction, and script- and screen-writing. The English and Comparative Literature Department supports active student organizations such as the Poet's and Writers' Coalition, the English Graduate Group, and the Student Society for Technical Communication. It is also home to the Steinbeck Fellows Program and to the Lurie Visiting Distinguished Author, both annual appointments of distinguished writers who are in residence. The department also houses the Center for Literary Arts which brings distinguished poets, fiction writers, and creative non-fiction writers into campus where they give free readings.

Faculty include instructors who are publishing poets and prose writers, scholars of literature and language, and active contributors to their fields nationally and internationally. English faculty have won university awards for superior teaching and professional accomplishment. Because the department takes seriously its mission to develop the reading and writing skills, interpretive ability, and cultural awareness of all the university's students, it maintains a tradition of strong teaching, good scholarship, and vigorous support of the literary arts. Majors, minors, and general education students all have access to some of the best teachers and writers in the university. The department has a broad program of advising, and students are able to meet with faculty for consultation on a regular basis.

The department offers a BA in English, a BA with a concentration in Career Writing, a BA with a concentration in Creative Writing, a BA in Preparation for Teaching (Single Subject: English),an MA in English and an MFA in Creative Writing. Students majoring in other fields may elect to minor in literature, comparative literature, creative writing, or technical writing.

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 complete an Honors Colloquium (ENGL 190). Application to the honors program should be made through the English Department Office.

BA - English

	Semester Units
General Education Requirements	48
Of the 51 units required by the university, 3 may be satisfied by specified major and support requirements. Consult major advisor for details.	
American Institutions	(6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.	
Physical Education	2
Requirements in the Major	48
Core Requirements	27
ENGL 056A, ENGL 056B, ENGL 068A, ENGL 068B and ENGL 100W (15); ENGL 101, ENGL 102, ENGL 103, ENGL 105 or ENGL 140A (3); ENGL 122, ENGL 123A, ENGL 123B, ENGL 123C, ENGL 123D, ENGL 125, ENGL 126 or ENGL 141 (3); ENGL 144 or ENGL 145 (3); ENGL 193 (3)	
Elective Requirements	21
Any seven courses, six of which must be upper division	
Foreign Language Requirement	0-10
One year of foreign language study at the college level or equivalency through examination	
Electives or Minor	12-22
At least six units must be upper division	
Total Units Required	120

Explanations and Limitations

English majors who complete the Humanities Honors Program will be credited for ENGL 125A.

Details and advising information on the above requirements are available in the English Department Office.

BA - English, Concentration in Career Writing

Semester Units

General Education Requirements 48
Of the 51 units required by the university, 3 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Requirements in the Major 48

Core Requirements 27
ENGL 056A, ENGL 056B, ENGL 068A, ENGL 068B and ENGL 100W (15); ENGL 101, ENGL 102 or ENGL 103 (3); ENGL 123A, ENGL 123B, ENGL 123C, ENGL 123D or ENGL 125 (3); ENGL 144 and ENGL 193 (6)

Career-Writing Concentration 21
ENGL 071 or ENGL 135 (3); ENGL 106, ENGL 107 and ENGL 129 (9); three upper division English courses (9)

Foreign Language 0-10
One year of foreign language study at the college level or equivalency through examination

Electives or Minor 12-22

Total Units Required 120

BA - English, Concentration in Creative Writing

Semester Units

General Education Requirements 45
Of the 51 units required by the university, 6 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Support for the Major 3
ENGL 071

Requirements in the Major 48

Core Requirements 18
ENGL 056B, ENGL 068A, ENGL 068B and ENGL 100W (12); ENGL 122, ENGL 123A, ENGL 123B, ENGL 123C, ENGL 123D or ENGL 125 (3); ENGL 144 or ENGL 145 (3)

Creative-Writing Concentration 27
ENGL 139 (3); Complete five courses from: ENGL 105, ENGL 130, ENGL 131, ENGL 133, ENGL 135 (*) (15); Complete three courses from: ENGL 149, ENGL 150, ENGL 151, ENGL 153B, ENGL 161, ENGL 162, ENGL 163, ENGL 164, ENGL 165, ENGL 166, ENGL 167, ENGL 168, ENGL 169, ENGL 176, ENGL 177 (9)

Capstone 3
ENGL 193C

Foreign Language 0-10
One year of foreign language study at the college level or equivalency through examination

Electives or Minor 12-22

Total Units Required 120

*ENGL 105, 130, 131, 133 and 135 are all repeatable for a maximum 6 units of credit each.

BA - English, Preparation for Teaching (Single Subject)

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 index) for information on application and admission to credential programs.

Semester Units

General Education Requirements 39-42
Of the 51 units required by the university, 9-12 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Requirements in the Major 54

Core Requirements 42
ENGL 056A, ENGL 056B, ENGL 068A, ENGL 068B, ENGL 100W, ENGL 101, ENGL 103, ENGL 109, ENGL 112B, ENGL 117B, ENGL 122, ENGL 125, ENGL 145 and ENGL 193

Elective Requirements 12
Any four courses from the following list: ENGL 071, ENGL 102, ENGL 105, ENGL 112A, ENGL 115, ENGL 120, ENGL 123A-D, ENGL 127, ENGL 130-137, ENGL 141-144, ENGL 146-154, ENGL 161-169, ENGL 174, ENGL 182

Foreign Language Requirement 0-10
One year of foreign language study at the college level or equivalency through examination

University Electives or Minor 12-25

Total Units Required 120

Minor - Literature

Semester Units

Six upper division literature courses (18)

Total Units Required 18

Minor - Comparative Literature

Semester Units

CLIT 121 and CLIT 122 (6)
Foreign language literature courses (120 or above) or upper-division literature-in-translation courses with extensive reading in the original language, subject to instructor consent and advisor approval. (12)

Total Units Required 18

Minor - Creative Writing

Semester Units

Required Course 3
ENGL 071

Creative Writing 12
Complete twelve units from: ENGL 130, ENGL 131, ENGL 133, ENGL 135

ENGL 130, ENGL 131, ENGL 133 and ENGL 135 may be taken twice for credit.</cstyle:>

Literature 3
Complete three units from: ENGL 149, ENGL 150, ENGL 151, ENGL 153B, ENGL 161, ENGL 162, ENGL 163, ENGL 164, ENGL 165, ENGL 166, ENGL 167, ENGL 168, ENGL 169, ENGL 176, ENGL 177

Total Units Required 18

Minor - Professional and Technical Writing

Semester Units

Core Courses 9
ENGL 106, ENGL 107 and ENGL 129

Additional Requirements 9
Three advisor-approved electives

Total Units Required 18

Certificate Program in Professional and Technical Communication

The English Department offers an 18-unit program consisting of a six-unit core (ENGL 106, 107) and nine units of advisor approved electives. One advisor approved elective must be in Technology. This program is designed for those seeking greater specialization, including postbaccalaureate students who hold or seek employment in technical or professional writing. Prerequisite: eligibility for ENGL 100W.

MA - English

Requirements for Admission to Classified Standing

In addition to meeting minimum requirements for admission to the Graduate Division outlined in this catalog, an applicant must have:

A minimum of 24 semester hours of acceptable undergraduate course work in English beyond freshman composition;

A 3.0 grade average in English courses;

Approval by the departmental graduate committee;

For a foreign student, TOEFL score of 610 or higher.

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 gives promise of satisfactory completion of requirements for admission to classified standing may, with the approval of the departmental graduate committee, be admitted as conditionally classified in the MA - English program.

Requirements for Admission to Candidacy for the MA - English

Admission to candidacy for the Master's degree in English requires favorable action by the departmental graduate committee and by the University Graduate Committee. Applicants will observe the stipulations relative to such items as transfer credit, time limit, completion of the Graduate English Writing Requirement and scholarship stated in this catalog. They should particularly note that fitness for advanced study and professional training, not merely high grades or the satisfaction of formal requirements, is a prime requisite for graduate work.

MA - English

All candidates for the Master of Arts degree in English, which is designed for students who have completed an undergraduate major in English or its equivalent, are required to:

- 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 course work to be applied to the MA program must be approved in advance by the graduate advisor.
- Demonstrate competency in written English. Please refer to the SJSU catalog section titled "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape.
- Demonstrate reading proficiency in a second language by passing the departmental language examination. (This requirement is waived for students who have, within five years of achieving candidacy, earned a grade of at least "B" in the fourth semester of an acceptable foreign language course. It is also waived for students whose first language is not English.)
- Pass the MA comprehensive examinations.

	Semester Units
Core Course ENGL 201 (to be taken as soon as possible after achieving classified standing)	3
Additional Courses Additional graduate-level courses chosen with MA advisor's approval (students may elect, with approval of the English MA Committee, to write a thesis in lieu of six units of course work)	27
Total Units Required	30

MFA - Creative Writing

Requirements for Admission to Classified Standing

In addition to meeting minimum requirements for admission to the Graduate Division outlined in this catalog, an applicant must have:

A minimum of 24 semester hours of acceptable undergraduate course work in the major beyond freshman composition;

A 3.0 grade point average in major courses;

Approval by the departmental MFA in Creative Writing Committee;

For a foreign student, TOEFL score of 610 or higher.

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 gives 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 Admission to Candidacy for the MFA in English

Admission to candidacy for the Master of Fine Arts degree in English requires favorable action by the departmental MFA in Creative Writing Committee. Applicants will observe the stipulations relative to such items as transfer credit, time limit, completion of the core requirement and scholarship stated in this catalog.

All candidates for the Master of Fine Arts degree in Creative Writing, are required to:

- Complete an approved 48 unit program with a grade point average of 3.0 or better. At least 36 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 Creative Writing Director.
- Demonstrate competency in the theory and practice of literary production and scholarship by passing ENGL 201C.
- Demonstrate reading proficiency in a second language by passing a language examination. (This requirement is waived for students whose first language is not English or who have, within five years of achieving candidacy, earned a grade of "B" or better in the fourth semester of an acceptable foreign language course).
- Write a substantial work, with critical introduction, in one of the four program emphases, Poetry, Fiction, Nonfiction, or Script Writing.
- Pass the MFA Comprehensive Examination.

	Semester Units
Core Course ENGL 201C	3
Practicum *All courses repeatable for up to 12 units of credit.</cstyle:>* Complete eighteen units from: ENGL 240, ENGL 241, ENGL 242	18
Literary Research Complete five courses from: ENGL 139, ENGL 202, ENGL 203, ENGL 204, ENGL 208, ENGL 211, ENGL 215, ENGL 216, ENGL 217, ENGL 225, ENGL 226, ENGL 227, ENGL 229, ENGL 230, ENGL 232, ENGL 233, ENGL 253, ENGL 254, ENGL 255, ENGL 256, ENGL 292, ENGL 298	15
Professional Training Complete six units from: ENGL 257, ENGL 259, ENGL 298	6
Thesis/Capstone Requirement *Creative project in candidate's emphasis area.</cstyle:>* ENGL 299	6
Total Units Required	48

Environmental Studies Department

College of Social Sciences

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Professors

Gary A. Klee
Rachel O'Malley
Lynne A. Trulio, Chair

Associate Professors

Katherine Cushing
Will Russell

Assistant Professors

Dustin Mulvaney

Curricula

BS, Environmental Studies
BS, Environmental Studies, Concentration in Energy
BS, Environmental Studies, Concentration in Environmental Impact Assessment
BS, Environmental Studies, Concentration in Environmental Restoration and Resource Management
BA, Environmental Studies
BA, Environmental Studies, Preparation for Teaching
Minor, Environmental Studies
Minor, Energy Policy and Green Building
Minor, Park Ranger and Administration
Minor, Sustainable Water Resources
MS, Environmental Studies

Introduction

The Environmental Studies Department provides rigorous, systematic and integrated approach to the study and management of environmental problems and issues. Upon completion of the degree program, students have a solid theoretical and applied preparation for making substantive contributions to promoting a sustainable society. With almost 40 years of experience granting degrees in environmental studies, this program has achieved a level of professionalism envied by newer environmental programs at other colleges and universities.

The employment record for recent graduates is excellent. Representative occupations include specialists in environmental impact assessment, environmental restoration, energy, water resources, environmental education, sustainable agriculture, park management, environmental regulation and policy, integrated waste management and recycling. More information about the successful job placement of our many graduates is available from the department.

The BS, BA, and the BA Preparation for Teaching (multiple subjects) are available for undergraduates, with the MS degree available to graduates. The BS and BA both offer a broad education in environmental concepts and applications through the core courses, along with a narrower subfield linked to a specific career pathway. This is done through the advisor-approved minor or departmental concentration and electives. The BS program provides a strong technical background in quantitative resource analysis, suitable for both resource managers and policy makers or practitioners such as energy auditors, designers of renewable energy systems, or ecosystem restorationists. The BA provides a more general education oriented toward environmental law, business, policy, planning or communications. The Preparation for Teaching program prepares the student for application to the elementary (K-8) credential program. In addition, many students in the program choose careers in outdoor education or park ranger work.

Graduates from the MS degree find professional opportunities in environmental consulting, management, restoration, environmental health and safety, coastal resources and wildlands protection, to name just a few. There are over 200 Environmental Studies undergraduates and more than 70 graduate students in our MS degree program.

Because Environmental Studies is interdisciplinary, our faculty are drawn from many different fields, including ecology, energy and water resources, engineering environmental studies, geography, and law (more details on faculty background, teaching, and research are available from the department web site). The Environmental Studies faculty is noted for its excellent teaching and personal involvement with students. Faculty are active in community, regional, state and international environmental affairs, and bring these outside experiences to the classroom. Many faculty conduct research and undertake other scholarly work, which often involves students.

Beyond the Classroom

An important component of the Environmental Studies major is the professional internship, where students assume work responsibilities with corporations, businesses, public agencies, non-profit groups, public schools and other organizations involved in environmental problem solving and management. Three units of academic credit are given for 135 hours of supervised professional work.

The Center for Development of Recycling (CDR) is attached to the Environmental Studies Department and is funded by local government to research, develop and disseminate information on integrated waste management. Students work with CDR on special projects and earn class credit. CDR is located in Washington Square Hall 115. Bruce Olszewski is the director.

The Environmental Resource Center (ERC) is an outreach and sustainability organization that works closely with the Environmental Studies Department and the surrounding community. As its primary work the ERC organizes SJSU's Earth Day, undertakes sustainability projects, and provides resource information with its files and library. Lynne Trulio is the faculty advisor for the ERC.

Environmental Studies Honors Program

Students with a departmental GPA of 3.5 or above are eligible to participate in the honors program. Eligible students should contact a faculty member in the Environmental Studies Department to sponsor their honors project, which then will be presented at the honors colloquium. Students must enroll through their sponsor in ENVS 193 while conducting the project.

Structure of the BS, BA and MS Degrees

The undergraduate Environmental Studies degrees are structured around three components: the preparation sequence consisting of specific classes in economics, sciences, and statistics; the core classes in Environmental Studies; and the advisor-approved minor or concentration and electives that are directed to a specific career pathway. This part of the major consists of classes both outside of and within the department and must be approved in advance by an Environmental Studies faculty advisor. More details on all aspects of the degree requirements are found on the advising sheets available in the departmental office in Washington Square Hall 118 or on the department web site.

BS - Environmental Studies

The BS degree is designed to prepare students for career opportunities in water resources management, biological resource protection, aquatic environments, conventional and sustainable agriculture, energy resources, environmental health and safety, environmental impact assessment, environmental restoration, and wilderness open space resource management.

Semester Units

General Education Requirements 33
Of the 51 units required by the university, 18 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 24
ENVS 010, STAT 095, ECON 001B, BIOL 001A, CHEM 001A and PHYS 002A

Requirements in the Major 67

Core Sequence 25
ENVS 001, ENVS 100W, ENVS 107, ENVS 110, ENVS 117, ENVS 124, ENVS 185 and ENVS 198

Electives 24
6-8 units of field courses are required from ENVS 144, 154, 165, 166, 187, 189, 190, 191, 270. 3-9 units of ENVS 194 recommended.</cstyle:>
Advisor-approved electives in environmental studies

Additional Electives 18
Advisor-approved minor and/or electives

Total Units Required 126

UNVS 015C may be used in lieu of the statistics course required by this major through the Summer 2014.

*Note: BIOL 001 and BIOL 002 will be accepted in lieu of BIOL 001A if taken in the 2010-11 academic year.

BS - Environmental Studies, Concentration in Energy

Semester Units

General Education Requirements 33
Of the 51 units required by the university, 18 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 24
ENVS 010, ECON 001B, STAT 095, BIOL 001A, CHEM 001A and PHYS 002A

Requirements in the Major 67

Core Sequence 25
ENVS 001, ENVS 100W, ENVS 107, ENVS 110, ENVS 117, ENVS 124, ENVS 185 and ENVS 198

Energy Concentration 19
ENVS 116, ENVS 119, ENVS 132 and ENVS 133 (12); ENVS 130 or ENVS 137 ((3)) (3); PHYS 002B (4)

Additional Electives 23
6-8 units of field courses are required from ENVS 144, 154, 165, 166, 187, 189, 190, 191, 270. 3-9 units of ENVS 194 recommended.

Total Units Required 126

UNVS 015C may be used in lieu of the statistics course required by this major through the Summer 2014.

*Note: BIOL 001 and BIOL 002 will be accepted in lieu of BIOL 001A if taken in the 2010-11 academic year.

BS - Environmental Studies, Concentration in Environmental Impact Assessment

Semester Units

General Education Requirements 33
Of the 51 units required by the university, 18 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 24
ENVS 010, STAT 095, ECON 001B, BIOL 001A, CHEM 001A and PHYS 002A

Requirements in the Major 43

Core Sequence 25
ENVS 001, ENVS 100W, ENVS 107, ENVS 110, ENVS 117, ENVS 124, ENVS 185 and ENVS 198

Environmental Impact Assessment Concentration 18
ENVS 119, ENVS 129, ENVS 181 and ENVS 190 (12); Complete two courses from: ENVS 108, ENVS 113, ENVS 125, ENVS 128, ENVS 135, ENVS 140, ENVS 142, ENVS 167, ENVS 187 (6)

Additional Electives 24
Advisor-approved electives in Environmental Studies:</cstyle:>
6-8 units of field courses are required from ENVS 144, 154, 165, 166, 187, 189, 190, 191, 270. 3-9 units of ENVS 194 recommended.

Total Units Required 126

UNVS 015C may be used in lieu of the statistics course required by this major through the Summer 2014.

*Note: BIOL 001 and BIOL 002 will be accepted in lieu of BIOL 001A if taken in the 2010-11 academic year.

BS - Environmental Studies, Concentration in Environmental Restoration and Resource Management

This concentration is designed to offer students a specialization in the growing field of environmental restoration.

Semester Units

General Education Requirements 33
Of the 51 units required by the university, 18 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 24
ENVS 010, STAT 095, ECON 001B, BIOL 001A, CHEM 001A and PHYS 002A

Requirements in the Major 67

Core Sequence 25
ENVS 001, ENVS 100W, ENVS 107, ENVS 110, ENVS 117, ENVS 124, ENVS 185 and ENVS 198

Environmental Restoration and Natural Resource Management Concentration 19
ENVS 128, ENVS 144, ENVS 187 and ENVS 191 (12); ENVS 154 and ENVS 173 (3)

Additional Electives 23
6-8 units of field courses are required from ENVS 144, 154, 165, 166, 187, 189, 190, 191, 270. 3-9 units of ENVS 194 recommended.

Total Units Required 126

UNVS 015C may be used in lieu of the statistics course required by this major through the Summer 2014.

*Note: BIOL 001 and BIOL 002 will be accepted in lieu of BIOL 001A if taken in the 2010-11 academic year.

BA - Environmental Studies

The BA degree is designed to prepare students for career opportunities in coastal resource management, environmental communications, environmental product design and packaging, environmental regulation and policy, integrated and solid waste management, human ecology and environmental planning.

Semester Units

General Education Requirements 33
Of the 51 units required by the university, 18 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major Sequence 13
ENVS 010, STAT 095, ECON 001B and CHEM 030A

Requirements in the Major 72

Core Sequence 25
ENVS 001, ENVS 100W, ENVS 107, ENVS 110, ENVS 117, ENVS 124, ENVS 185 and ENVS 198

Electives 29
Advisor-approved electives in environmental studies

Additional Electives 18
6-8 units of field courses are required from: ENVS 144, 154, 164, 166, 187, 189, 190, 191, and 270. 3-9 units of ENVS 194 recommended.</cstyle:>
Advisor-approved minor and/or electives

Total Units Required 120

Note: UNVS 015C may be used in lieu of the statistics course required by this major through the Summer 2014.

BA - Environmental Studies, Preparation for Teaching

This major is designed for students interested in teaching in elementary school or middle school. Students who wish to pursue a high school teaching career should complete a BA or BS in Environmental Studies in consultation with the department's undergraduate advisor for teaching. The following course work satisfies San José State University's requirements for a BA in Environmental Studies. In addition, this program is approved by the California Commission on Teacher Credentialing (CCTC) as subject matter preparation for diversified subject matter preparation.

Maintaining 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 index) for information on application and admission to credential programs.

Semester Units

General Education Requirements 6
Of the 51 units required by the university, 45 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Requirements in the Major 24

Core Courses 12
ENVS 001, ENVS 117, ENVS 158 and SOCS 177

Concentration 12

Energy Resources 12
ENVS 119, ENVS 132, ENVS 133 and ENVS 100W (or elective)

Natural Resources 12
ENVS 128, ENVS 148, ENVS 165 and ENVS 100W (or elective)

Policy and Procedures 12
ENVS 124, ENVS 187, ENVS 189 and ENVS 100W (or elective))

Basic Curriculum Requirements 72-81

Reading, Language and Literature 21-24
ENGL 001A, ENGL 001B, ENGL 010, ENGL 103 and ENGL 112A (15); COMM 045, LING 108 and EDEL 108E or CHAD 150 and CHAD 151 (6) (9)

History and Social Science 15
AAS 033A and AAS 033B (6) or HIST 015A and HIST 015B (6); GEOG 137, GEOG 138 and GEOG 139 (9)

Mathematics 9
MATH 012, MATH 105 and MATH 106

Science 12
CHEM 035, BIOL 021, GEOL 103 and SCI 110

Visual and Performing Arts 9
CA 177 (3); Complete two courses from: ART 039, ART 138, MUSC 010B, MUSC 185A, DANC 148, TA 131 (6)

Physical Education and Health 3-6
KIN 177 and EDTE 190 (6) or CHAD 149 (3)

Human Development 3-6
CHAD 060 (3) or PSYC 082 and CHAD 067 (6)

Internship 3
ENVS 194

Electives 4-13

Total Units Required 120

Minor - Environmental Studies

Semester Units

ENVS 001 (3); ENVS 124 and ENVS 185 (7); ENVS 107 or ENVS 119 (3); two advisor-approved electives (6) (19)

Total Units Required 19

Minor - Energy Policy and Green Building

Semester Units

Core Requirements 15
ENVS 001, ENVS 119, ENVS 130, ENVS 132 and ENVS 137

Electives 3-4
Complete one course from: ENVS 116, ENVS 118, ENVS 129, ENVS 133, ENVS 148, ENVS 154, ENVS 184

Total Units Required 18-19

Minor - Park Ranger and Administration

Semester Units

Core Requirements 13
Three 3-unit lower division (CSU-transferable) courses from an A.S. degree in Park Management, from West Valley College or equivalent program (9); ENVS 187 (4)

Additional Units 6-7
Complete one course from: ENVS 144, ENVS 154, ENVS 165, ENVS 173, ENVS 189 (3-4); Complete one course from: POLS 114, SOCI 153 (3)

Total Units Required 19-20

Minor - Sustainable Water Resources

Semester Units

Core Requirements 13
ENVS 001, ENVS 128, ENVS 129 and ENVS 144

Electives 3-4
Complete one course from: ENVS 118, ENVS 154, ENVS 187, ENVS 270

Total Units Required 16-17

MS - Environmental Studies

Graduate Coordinator: Will Russell, Advisors: Rachel O'Malley, Gary Klee, Lynne Trulio, Katherine Cushing

Requirements for Admission to Classified Standing

Basic requirements for admission to the Graduate Division are outlined in the Admissions section of this catalog. Contact the department or see our admissions materials for specific application deadlines. For admission to classified standing the department requires the following:

1. An undergraduate degree in Environmental Studies or a related field from an accredited institution.

2. A 3.0 or ("B") overall grade point average for the last 60 semester units of academic study.

3. The capability, in the opinion of the graduate committee, of successfully completing the degree requirements.

4. 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 general science background). Courses used to remove such deficiencies cannot be used to fulfill MS requirements. For further information see graduate coordinator.

5. A satisfactory score on the official Graduate Record Examination Aptitude Test (GRE). Please note that no specialty is required. The exam results are used as an advisory tool, not as the sole determinant of admittance (or rejection) into the program.

6. Two letters of recommendation from university faculty members.

7. A personal statement of purpose that describes your background and goals and objectives for seeking the MS - Environmental Studies at SJSU. This letter should also convey a sense of focus and direction for thesis research.

8. A minimum score of 580 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 the 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 course work.

Requirements for Admission to Candidacy for the Master's Degree

The student may be admitted to candidacy for the MS - Environmental Studies by complying with requirements of the university, as outlined in this catalog.

Completing Requirements for the Master's Degree

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. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape.

Semester Units

Plan A (with Thesis) 30

Seminars 9
ENVS 200, ENVS 250 and ENVS 297

Thesis 6
ENVS 299

Electives 15
100 or 200-level courses in environmental studies or related fields selected with advisor's approval. At least 9 elective units must be in the form of field analysis, internship experience, laboratory work, or other form of application science.

Plan B (without Thesis) .....
se work, Plan B students will take comprehensive examinations on four topics to be arranged by the student's project committee.

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 two graduate advisors, the graduate coordinator and the department chair. In addition to the required course work, Plan B students will take comprehensive examinations on four topics to be arranged by the student's project committee.</cstyle:>

Seminars 9
ENVS 200, ENVS 250 and ENVS 297

Project 6
ENVS 298

Electives 15
At least 9 of the total 15 elective units must be in the form of field analysis, internship experience, laboratory work, or other form of application science. Elective courses must be 100- or 200-level in environmental studies or related field with advisor's approval.

Total Units Required 30

General Engineering

College of Engineering

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Professors

Thalia Anagnos
Patricia Ryaby Backer
Ahmed Hambaba, Associate Dean
Michael B. Jennings
Nader Mir
Peter Reischl
Guna S. Selvaduray

Associate Professors

Leonard P. Wesley, MSE Director

Curricula

BS, General Engineering
Minor, Green Engineering
MS, Engineering
MS, Engineering, Concentration in Electronic Materials and Devices

Introduction

In addition to the traditional disciplinary majors, the College of Engineering offers an MS Engineering (MSE) with special concentrations, and a BS General Engineering. Both the BS and MS programs encompass interdisciplinary study. The College also offers various special Minors including Green Engineering.

Program Educational Objectives

The BS General Engineering degree program has a group of Program Educational Objectives which are intended to develop specific attributes for the General Engineering graduate. These attributes should be demonstrated in professional experience after graduation.

1. Demonstrated understanding of the fundamental knowledge prerequisite for the practice of, or for advanced study in, engineering, including its scientifically principles, rigorous analysis, and solving engineering problems.

2. Demonstrated broad education knowledge, including knowledge of important issues in engineering, necessary for productive careers in the public or private sectors, or for the pursuit of graduate education.

3. Demonstrated clear communication skills, responsible teamwork, professional attitudes and ethics.

4. Demonstrated a preparation for the complex work environment and for lifelong learning.

BS - General Engineering

For selected high-performing students the General Engineering degree is an opportunity to develop a special interdisciplinary major. Students must meet with a General Engineering advisor early in their studies to determine if such a plan is right for them. Other students entering General Engineering are encouraged to explore the various traditional engineering fields and select a program which fits their interests by their second year of study at SJSU. All College of Engineering undergraduate majors are required to maintain a Major GPA of 2.0 or above. Major GPA includes all courses required for the major, including math, science and engineering.

	Semester Units
General Education Requirements Of the 51 units required by the university, 18-21 may be satisfied by specified major and support requirements. Consult major advisor for details.	30-33
American Institutions Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.	(6)
Physical Education	2
Preparation for the Major MATH 030, MATH 031, MATH 032, MATH 129A, MATH 133A, PHYS 070, PHYS 071 and CHEM 001A	29
Required for the Major	69
Engineering Common Area ENGR 010, MATE 025, EE 098, CE 099 and CMPE 046	14
Required Courses ENGR 100W and core courses as approved by advisor	35
Additional Courses Elective courses and senior design as approved by advisor	20
Total Units Required	130-133

Note: PHYS 050, PHYS 051 and PHYS 052 may be taken in place of PHYS 070 and PHYS 071.

Minor - Green Engineering

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. ENGR 102 or ME 172 (3 units) and ENGR 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 the Green Engineering advisor, 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.

	Semester Units
Core Requirements ENGR 102 or ME 172 (3); ENGR 103 (3)	6
Additional Course Complete one course from: ENVS 107, ENVS 116, ENVS 119, ENVS 132, ENVS 148, ENVS 167	3
Elective One additional course to be selected with and approved by the Green Engineering minor advisor	3
Total Units Required	12

MS - Engineering

The MS Engineering degree is an interdisciplinary program with the primary objectives of offering the practicing engineer 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 course work that is truly interdisciplinary and not available through the other Engineering programs in the College. The MSE programs typically include courses from at least three different programs in the College of Engineering and may also use courses in the College of Science or the College of Business. Courses are provided in five specified option areas and also in a Special option for more customized programs. Emphasis areas have been defined within each of the options to allow students to specialize within the option. The Special option currently includes programs such as Biomedical Devices, Bioinformatics/Bioengineering, Engineering Management, Electronic Materials and Devices, Environmental Health and Safety Systems, Manufacturing Systems, and Special Emphasis. Programs are offered primarily on-campus but there are also some specialized programs offered off-campus, such as the accelerated joint degree MSE/MBA, which is offered in coordination with the College of Business. Additional off-campus specialized engineering graduate programs have been established at local industry sites, including BAE, Lockheed, and KLA-Tencor. The MSE programs include participation with local industry professionals as committee members and sponsors of Master's projects and theses

Requirements for Admission to Classified Standing

Students seeking admission to the MS - Engineering 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 option. An engineering technology degree does not satisfy the degree requirement for admission to this program.

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 course work before becoming classified. 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 English Proficiency Requirement, and when their records in classes at San José State University show sufficient promise of success in the master's degree program.

Requirements for Admission 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 demonstrate competency in written English as a condition for advancement to candidacy. Please refer to the SJSU catalog section titled "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape. In addition, the applicant must demonstrate aptitude for advanced professional work in engineering as measured by instructor appraisals, analysis of previous academic work or other appropriate means. Admission 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:

	Semester Units
Core ENGR 201, ENGR 202 or ENGR 203	6-9
Option Core	3-9
Approved Option Electives	9-15
Thesis or Project ENGR 281 (1) then ENGR 298 (2); or ENGR 281 (1) then ENGR 299 (1-6); or ENGR 295A (3) then ENGR 295B (3)	3-6
Total Units Required	30

Students have the option to complete the requirements for the M.S. by completing a thesis (Plan A) or a project (Plan B). The student must first complete ENGR 281 - Master's Project/Thesis Preparation Seminar (1 unit) before beginning the thesis or project research.

Option Areas

In consultation with a program advisor, the student defines an option area to meet his/her educational objectives. Typical options include:

- Bioinformatics
- Embedded Systems (Offered as a special off-campus program)
- Electronic Materials and Devices
- Engineering Management
- Environmental Health and Safety
- Green Technology
- Manufacturing Systems
- Systems Engineering (offered as part of the joint MSE/MBA special off-campus program)
- Software Systems (offered as part of the MSE/MBA special off-campus program)
- Special Option (Specific program configuration to meet the multi-disciplinary needs of a student not available in the other options)

The MSE/MBA program and special off-campus programs are coordinated through the Graduate and Extended Studies Office. Students interested in these programs should go to the Graduate and Extended Studies Office section of the College of Engineering web site (www.engr.sjsu.edu/ges).

MS - Engineering, concentration in Electronic Materials and Devices

The concentration in Electronic Materials and Devices provides students with an in-depth education in electronic materials processes and the design of semiconductor devices. This concentration includes elective emphases in the areas of Electronic Materials, Custom Analog VLSI and Custom Digital VLSI. Students may also choose to combine concentration electives to develop a custom emphasis, such as Mixed Signal VLSI.

	Semester Units
Core Engineering Courses ENGR 201 and ENGR 203	6
Required Concentration Courses EE 221, MATE 129 and MATE 153	9
Depth of Study Electives Choose 9 units of advisor approved clusters of electives	9
Thesis or Project	6
Plan A (Thesis) ENGR 281 (1) and ENGR 299 (5)	6
Plan B (Project) ENGR 202 (3), ENGR 281 (1) and ENGR 298 (2)	6
Total Units Required	30

Geography Department

College of Social Sciences

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www.sjsu.edu/depts/geography

Associate Professors

Kathryn Davis
Richard Taketa, Chair

Assistant Professors

Gary Pereira
Kathrine Richardson

Curricula

BA, Geography
Minor, Geography
Minor, Geographic Information Science
MA, Geography
Certificate, Geographic Information Science

Introduction

Geography is for explorers, whether their discoveries are a world away or just next door. Our goal is to make sense of how people and the world's environments interact to build the landscapes where we learn, work and play. Geographers analyze the world with broad and integrative methods, often linking data from the social sciences, natural sciences and humanities. Geography is the way to understand locations, places, and regions. It is the way to interpret both the world's incredible diversity and its repetitive similarities. Geographers love maps. Much of geography centers on learning from maps and communicating with maps. Whether a sketch on a napkin or a computer-driven Geographic Information System (GIS), maps tell of locations and regions, routes and pathways, and the directions to both the past and the future. Modern geography, at the junction of globalism, environmentalism and the innovations in electronic communications technologies, is both exciting and rewarding.

The undergraduate and graduate programs in geography at San José State University focus on the analysis of geographical processes and problems. Prospective students are encouraged to consult the geography website (www.sjsu.edu/depts/geography/) as well as the informational brochures available in the department office (WSQ 118.)

Undergraduate Program in Geography

Undergraduate majors complete a set of core courses that provide a common foundation in geographic analysis. Then the student selects one of three emphases for further study to complete the degree.

Geographic Information Science provides training in collecting, organizing, analyzing and presenting geographic data. Geographic information is acquired from field study, digital databases, aerial photos and satellite imagery; it is organized and analyzed in map form and in geographic databases; and it is presented in both traditional and animated mapping media. Graduates find employment in government agencies, the electronic communications industries and GIS development companies. Students are prepared for professional work as cartographers, GIS application developers and remote sensing analysts. The courses in support of this emphasis build a background in computer applications and computer programming as well.

Global Analysis examines global and interregional connections and diversity in both human and environmental systems. Graduates find work in multinational corporations, international development agencies and in positions such as international marketing, population, foreign policy analyst or agricultural forecaster. Global geography students take a program of both regional and thematic courses, such as Latin American, U.S., Eastern and Southern Asia, and Europe. Thematically we explore such issues as conflict, nationalism, globalization and population as well as a broad range of additional themes.

Urban Analysis is the study of the economic, social, political, and environmental patterning of cities and urban regions. Graduates specializing in this area find employment with consulting companies, real estate companies and local and regional planning agencies. Possible careers include urban planner and location analyst. The courses supporting this emphasis build a comprehensive understanding of metropolitan issues, particularly as these apply to San José and "Silicon Valley."

The MA Program in Geography focuses on geographic information science. Students specialize in geographic information systems development (including design of databases, algorithms, and application software), cartographic visualization (including design of dynamic and interactive mapping systems, especially integrated with GIS), or remote sensing (including analysis of satellite and aerial images, image processing, and environmental analysis).

Geography classes encourage frequent faculty-student interaction. Courses are scheduled at convenient times. The Geography Department maintains laboratories for work in GIS, computer cartography and analysis of air photos and satellite images. Facilities include a range of workstations as well as printers and scanners for production-quality work. Geography students have the opportunity to participate in faculty research projects as well as exciting study abroad programs.

All students are assigned an academic advisor, who guides the student in selecting courses and assists the student in meeting the requirements of the university and department. Students are encouraged to maintain close contact with their advisor since the shared goal is successful completion of degree requirements in a reasonable amount of time.

The Geography Department has links to companies and government agencies throughout Silicon Valley, which includes one of the world's greatest concentration of firms building GIS hardware, software and custom applications. Career opportunities in geography have never been better. The Geography Department also has formal links to the earth environmental remote sensing program at NASA-Ames and the Metropolitan Technology Center at Moffett Field.

Internship opportunities for geography majors are extraordinary. The department receives requests for interns from the many firms in the growing GIS industry. In addition students find internships in an assortment of government agencies.

The Geography B.A. is also excellent preparation for students interested in a career in teaching. Students planning to be teachers should consult the geography undergraduate advisor for a recommended list of courses to help them prepare for the CSET.

Students interested in majoring in geography should telephone or email the department to make an appointment with the undergraduate advisor.

The Geography Department follows all the university rules regarding transfer of credits from community colleges and other four-year institutions.

Departmental 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 Thesis under supervision of a department faculty member. Students must have a 3.5 GPA in geography to qualify for Honors Thesis option.

BA - Geography

Semester Units

General Education Requirements 39-45
Of the 51 units required by the university, 6-12 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 3
GEOG 195 or STAT 095 (GIS concentration requires GEOG 195)

Requirements in the Major 48-51

Core Geography Courses 21

These courses are to be taken by all majors.</cstyle:>
GEOG 001, GEOG 010, GEOG 101, GEOG 115, GEOG 135 and GEOG 170 (18); GEOG 186 or GEOG 187 (3)

Emphases in Geography 24-27

Select one of the three following emphases.</cstyle:>

Global Analysis 24
Complete four courses from: GEOG 105, GEOG 107, GEOG 112, GEOG 120, GEOG 121, GEOG 123, GEOG 124, GEOG 125, GEOG 130, GEOG 171, GEOG 172, GEOG 181 12
Complete four courses from: GEOG 125, GEOG 140, GEOG 145, GEOG 150, GEOG 155, GEOG 160, GEOG 168 12

Urban Analysis 24
Complete five courses from: GEOG 105, GEOG 145, GEOG 172, GEOG 173, GEOG 181, GEOG 182 15
Support of the emphasis: URBP 101 (3); Complete two courses from: ANTH 125, ECON 166, POLS 103, POLS 114, SOCI 161, URBP 124, URBP 151, URBP 178 (6) 9

Geographic Information Science 27
Complete six courses from: GEOG 171, GEOG 172, GEOG 173, GEOG 175, GEOG 178, GEOG 181, GEOG 182, GEOG 195 18
Support of the emphasis: MATH 019 and CS 046A 9

Capstone Course 3
GEOG 199

Electives 19-28

Total Units Required 120

Note: UNVS 015C may be used in lieu of the statistics course required by this major through the Summer 2014, except for the emphasis in Geographic Information Science.

Major who select either the Global Analysis or Urban Analysis Emphasis may acquire proficiency in Geographic Information Science by completing the requirements for the Certificate in Geographic Information Science.

Minor - Geography

The basic minor requires 15 units in geography, including GEOG 001, GEOG 101, GEOG 170, and two courses from one of the emphases.

Also, there are a series of specifically tailored minors for the various specialties within the business curricula. The geography minor advisor should be consulted regarding these degrees of flexibility.

Semester Units

Required Courses 9
GEOG 001, GEOG 101 and GEOG 170

Elective Courses 6
Students must select six units from one of the emphases. Students intending a career in teaching may take Geog 123 for three of these units.

Total Units Required 15

Minor - Geographic Information Science

Semester Units

GEOG 170, GEOG 171 and GEOG 175 (9); GEOG 172 and GEOG 173 (6) or GEOG 181 and GEOG 182 (6) (15)

Total Units Required 15

Geographic Information Science Certificate

The Geography Department also offers a "Certificate in Geographic Information Science." This 18 unit program of courses provides thorough training in the acquisition, analysis, and display of geographic data, information, and knowledge. It is geared for working professionals as well as majors outside geography. For details see www.sjsu.edu/depts/geography/

MA - Geography

Advisor: Richard Taketa

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.

Requirements for Admission to Classified Standing

Basic requirements for admission to the Graduate Division are outlined in the Admissions section of this catalog. In addition, the department requires the following for admission to classified standing:

1. An undergraduate degree in geography or a reasonably related field from an accredited institution.

2. A 3.0 ("B") overall grade point average for the last 60 semester units of academic study.

3. The capability, in the opinion of the Department Graduate Committee, of successfully completing the degree requirements.

4. The removal of deficiencies if preparation differs markedly from the BA - Geography at San José State University.

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:

1. 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.

2. 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 Admission to Candidacy for the Master's Degree

The student may be admitted 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 demonstrate competency in written English as a condition for advancement to candidacy. Please refer to the SJSU catalog section titled "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape. 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.

Completing Requirements for the Master's Degree

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)

1. A minimum of eighteen units in geography.

2. 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 university standards of style and form.

3. Final Examination: The thesis must be successfully defended orally before the thesis committee.

Plan B (without Thesis)

1. A minimum of twenty-one units in geography.

2. Comprehensive Examination: The final written comprehensive examination covering the fundamentals of geography and the candidate's primary area or field of study must be satisfactory. This normally consists of three separate examinations.

4. 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 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.

	Semester Units
Plan A (with Thesis)	30
Core Seminar GEOG 290	3
Geography Seminars Complete two courses from: GEOG 239, GEOG 279, GEOG 282	6
Thesis GEOG 299	6
Electives 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, Geog 195, and at least three units selected from Geog 173, Geog 175, or Geog 183.	15
Plan B (without Thesis)	30
Core Seminar GEOG 290	3
Geography Seminars Complete three courses from: GEOG 239, GEOG 279, GEOG 282	9
Electives 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, Geog 195, and at least three units selected from Geog 173, Geog 175, or Geog 183.	18
Total Units Required	30

Geology Department

College of Science

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June A. Oberdorfer
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Richard L. Sedlock, Chair

Associate Professors

Emmanuel Gabet
Jonathan Miller, Undergraduate Advisor

Assistant Professors

Jonathan Hendricks

Curricula

BS, Geology
BA, Earth Science
Minor, Geology
MS, Geology

Introduction

The Department of Geology provides a variety of courses and degree programs designed to increase students' understanding of the Earth, to continue their education toward advanced degrees in the Earth sciences and to obtain meaningful career employment.

The BS in Geology offers a flexible program that prepares students for admission to graduate programs in the geosciences, and for entry-level positions in engineering, geophysical and geological firms; in engineering, hazardous materials, regulatory, or ecological firms; in computer mapping firms; and in local, regional, and state government agencies.

The BA in Earth Science provides broad background in the earth sciences, with significant formal training in upper-division geology courses. With appropriate electives, a student can use this degree to apply to a single subject credential program to become a secondary school teacher. The program was designed to meet California Commission on Teacher Credentialing (CCTC) requirements for subject matter preparation in geology. However, 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.

The minor in geology allows graduates to supplement their major degree program with a broad, well-founded understanding of the Earth sciences and the principles of scientific investigation.

The MS in Geology provides graduates with advanced training in geology, including completion of an independent research thesis. The academic curriculum and extensive faculty expertise provide the opportunity for study in many areas of geology, with particular emphasis on applied geology and tectonics. Graduates are employed as geologists, engineering geologists, hydrogeologists, hydrologists, geophysicists and environmental managers (in engineering, geological, geophysical and environmental consulting firms and in the mining and petroleum industries). Graduates also pursue careers with research agencies, local and state government and teaching institutions.

Geology and Earth Science Honors Program

Departmental honors in the BS Geology and Earth 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.

BS - Geology

Semester Units

General Education Requirements 36
Of the 51 units required by the university, 15 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Support for the Major 21
CHEM 001A and CHEM 001B..... 10
PHYS 002A and PHYS 002B (8); PHYS 050 and PHYS 051 or PHYS 052 (8) 8
MATH 030 (with grade of "C-" or better) 3

Requirements in the Major 52

Core Geology Sequence 30
GEOL 001, GEOL 007, GEOL 028, GEOL 100W, GEOL 120, GEOL 122, GEOL 124, GEOL 125 and GEOL 129

Geology Electives 22
Complete twenty-two units from: GEOL 127, GEOL 129, GEOL 130, GEOL 132, GEOL 134, GEOL 135, GEOL 136, GEOL 137, GEOL 138, GEOL 140, GEOL 142, GEOL 147, GEOL 174, MS 141

Electives 9
MATH 31 recommended for graduate school or technical careers.

Total Units Required 120

BA - Earth Science

This major provides broad background in the earth sciences. Students interested in teaching science in high school or middle school should take the specified elective courses (consult with the advisor as needed). The BA - Earth Science is approved by the California Commission on Teacher Credentialing (CCTC) as subject matter preparation for a single subject credential in science with a geoscience concentration.

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 index) for information on application and admission to credential programs.

Semester Units

General Education Requirements 33
Of the 51 units required by the university, 18 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation and Supporting Courses 30
ASTR 101, ASTR 102, CHEM 001A, CHEM 001B and MATH 019 (19); METR 112 or METR 113 (3); PHYS 002A and PHYS 002B, PHYS 050 and PHYS 051 (8) or PHYS 052 (8) (8)

Required Geology Courses 24-27
GEOL 003, GEOL 004L, GEOL 007, GEOL 028, GEOL 100W and GEOL 105 (15); Complete three courses from: GEOL 122, GEOL 124, GEOL 125, GEOL 134, GEOL 137 (9-12)

Electives 28-31
Teacher candidates should take CHEM 120S and either BIOL 1 and BIOL 2 or BIOL 20 and BIOL 21.

Total Units Required 120

Minor - Geology

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 nine of which must be upper division courses, selected in consultation with the geology advisor.

Semester Units

Core Course and Laboratory 4
GEOL 003 and GEOL 004L 4
GEOL 103 and GEOL 104L..... 4
GEOL 007 4

Geology Electives 12
Complete twelve units from: GEOL 006, GEOL 028, GEOL 105, GEOL 107, GEOL 111, GEOL 112, GEOL 125, GEOL 134, or other geology courses selected with advisor approval (at least nine units must be upper division)

Total Units Required 16

MS - Geology

Requirements for Admission to Classified Standing

A student who wishes to enroll for graduate study in this department must meet the general requirements for graduate standing in the university as outlined in this catalog. In addition, the student must be accepted for classified standing by the departmental graduate advisor.

Requirements for Admission to Candidacy

A student is eligible for admission to candidacy for the Master of Science degree in Geology after the student has fulfilled the general all-university requirements for qualifying for candidacy as outlined in the Academic Regulations section of this catalog. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape {http://www.sjsu.edu/gape}. In addition, the student's admission must be approved by the departmental graduate advisor.

Completing 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 not less than 30 semester units earned beyond the bachelor's degree in 200-level and 100-level courses approved for graduate credit. All candidates are required to submit a master's thesis. All candidates must complete the equivalent of the requirements of the San José State University BS - Geology.

The oral examination for the Master of Science degree is scheduled with the student's thesis advisor. The candidate must demonstrate competency in written English. 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 outlined in the Thesis Section of this catalog, to the Graduate Division of the university in accordance with the published deadlines.

Semester Units

Seminar 2-4
GEOL 285

Core 12-24

Students emphasizing Marine Geology may substitute certain Marine Science courses, with advisor consent.</cstyle:>
Complete twelve units from: GEOL 205, GEOL 213, GEOL 214, GEOL 220, GEOL 222, GEOL 231, GEOL 234, GEOL 238, GEOL 255

Electives 0-12
Chosen with advisor consent

Master's Thesis 4
GEOL 299

Total Units Required 30

Gerontology Program

College of Applied Sciences and Arts

MacQuarrie Hall 407
408-924-2938

Assistant Professors

Brian R. Grossman, Director

Curricula

Minor, Gerontology

Certificate, Applied Social Gerontology

Introduction

Gerontology is the study of various aspects of aging. Aging is a vital concern because of the significant increase in the older population in the United States. This population has grown from 1 in 25 Americans in the beginning of the twentieth century to more than 1 in 8 Americans today. By 2030, that proportion will grow to 1 in 5, creating an unprecedented demand for gerontological knowledge and skills. The Gerontology Program helps students to gain a broad understanding of the aging process and the social implications of an aging society and prepares students for professional careers in services/programs benefiting older adults and their families.

The Gerontology Program, housed in the Health Science Department, is interdisciplinary, drawing from courses in departments across the university. It offers a general education course that addresses issues that students face in their personal, public, and professional lives in our aging society (GERO 107). The program offers a B.S. in Health Science with a Gerontology Concentration for undergraduates who seek employment in various health and aging-related fields. It also offers a minor to prepare undergraduate students in any major for careers working with older adults in such areas as long term care, aging/community services, housing, recreation, counseling, business and other fields. Post baccalaureate students who are prospective or current workers in aging-related positions may earn a Certificate in Applied Social Gerontology. Required courses are scheduled to accommodate the needs of working students.

Students at all levels have opportunities to gain practical experience and provide community service through internships that are available in more than 70 health, aging/human service, educational, and other aging organizations in the Bay Area. Recent graduates have been placed in a wide range of jobs in health and long term care, senior housing, case management, community education, social services, and other aging-related occupations.

Faculty members include a blend of full-time professors with appointments in various departments and experienced professionals who teach part time in their areas of expertise.

Advising

- Gerontology faculty serve as advisors to all concentration, minor and certificate students. The director works closely with other departments that offer gerontology courses to help students select those courses that fit their individual goals.
- The fieldwork coordinator helps students in the concentration, minor and certificate programs to locate appropriate placements for internship experiences in various community organizations.

Transferring Credit/Units

- Community college and other lower division courses are not directly equivalent to SJSU gerontology courses, since all the SJSU courses are upper division. However, lower division gerontology courses will be evaluated on a case-by- case basis. A maximum of 6 units of lower division course work may be applied to the minor or certificate programs with advisor approval.
- Upper division credit in gerontology can be applied to requirements for the minor and certificate programs. However, 9 units of course work must be earned at the SJSU campus for the minor and 12 units for the certificate.
- Credit in gerontology earned while in graduate standing at an accredited university may be applied to elective requirements for the certificate program with advisor approval. However, 12 units of course work must be earned at SJSU for the certificate.

Minor - Gerontology

	Semester Units
Required Core	12
GERO 107, GERO 108, GERO 117 and GERO 133	
Electives	3
Elective course substitutions may be made only with the prior consent of the Gerontology Advisor. GERO 180, Individual Studies, may be taken for 1-4 units.</cstyle:>	
Complete one course from: GERO 015, GERO 099, GERO 102, GERO 111, GERO 114, GERO 116, GERO 118, GERO 122, GERO 137, GERO 185	
Total Units Required	15

Applied Social Gerontology Certificate

The Gerontology Program offers a 18 unit Certificate in Applied Social Gerontology which is designed for students seeking greater specialization and for postbaccalaureate students who are prospective or current workers in an aging-related position.

Required and elective courses for the certificate include those required for the Gerontology Minor with the addition of one additional upper division or graduate level course (total 18 units) as approved by the advisor.

Global Studies

College of Social Science

210 N. Fourth St., Suite 301
(408) 924-7196 (Voice)
(408) 924-2664 (Voice)
(408) 924-7203 (Fax)
globalstudies@sjsu.edu
http://gs.sjsu.edu/

Professors

Michael Conniff

Curricula

BA, Global Studies

Minor, Global Studies

Introduction

The Global Studies BA program resulted from a long-term desire on the part of university leaders to provide education in the field of international affairs. A task force recommended its creation, and a Faculty Advisory Committee actually proposed the degree. It is one of several available in California. Graduates of the program will be skilled in the analysis of world affairs and ready for employment in a wide variety of professions/ agencies.

Students will design their programs with the help of a faculty advisor, who must approve important parts of students' course work. Undergraduate transfer students have a special responsibility to obtain approval of transfer credits with the assistance of their advisor during their first semester at San José State University. Our mission is to provide an academic home and advisement for the Global Studies majors to help them discover and understand their place and future in this interconnected and interdependent world.

BA in Global Studies

The interdisciplinary Bachelor of Arts degree in Global Studies offers an exciting opportunity for SJSU students to develop in-depth understanding of international flows of information, businesses, technologies, ideologies, people, values, and materials, and how these flows affect cultures, economies, politics, and environments for individuals, communities, nations and the world. Students who major in this field will acquire:

- Understanding of things that are universal
- Appreciation of the distinction between the local, regional, national, and global
- Knowledge of how different professions operate on a world scale
- Intermediate ability in a second language, other than English
- Capacity to work abroad for an extended time and
- Intercultural communication.

The Bachelor of Arts degree in Global Studies strives to equip its graduates with global competencies that will prepare them for work in, for example, national diplomatic service, international organizations, economic development, management of non-governmental organizations, business and commerce, environmental preservation, cultural pursuits, and the performing arts.

BA - Global Studies

Admission to the Major

Students applying to major in Global Studies should possess a strong commitment to international affairs, world geography, foreign languages, and intercultural relations. Prior study of foreign languages and travel abroad will increase students' chances for success. The advisor will discuss with students their suitability for the program based on letters, transcripts, faculty sponsors, interview(s), and/or essay(s) about personal experience and career goals that applicants submit when declaring the major. There are no prerequisites for admission to the major other than the general SJSU requirements.

Semester Units

General Education Requirements 51
51 units required by the university, consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Writing 100 ..... (3)
Students must take a 100W writing course, which will typically be taken in the department where they have taken the most required courses.

Physical Education 2

Preparation for the Major 3
Students should take the Foreign Language Department's 102 or 140 culture courses that correspond to their chosen second language.

Requirements in the Major 48

Core 12
GLST 001A, GLST 001B, GLST 179 and GLST 189

Major Breadth Courses 24

Complete two courses in different departments in these four areas. GLST 187 may be substituted for one course with approval of advisor.</cstyle:>

Global Geography and Environment: BIOL 110, ENVS 159, GEOG 107, GEOL 111, METR 112, NUFS 139, PHIL 126 6

Global Business and Economics: BUS 145, BUS 156, BUS 162, BUS 187, ECON 117, GEOG 115, GEOG 121, POLS 155 6

Global History and Politics: POLS 147, POLS 148, POLS 150, POLS 152A, COMM 115P, HIST 130A, HIST 130B, HIST 132, HIST 145, HIST 155, HIST 172B, GEOG 112 6

Global Cultures and Society: ANTH 102, ANTH 115, ANTH 166, ARTH 193A, ARTH 193B, COMM 152I, COMM 173F, LING 122, MCOM 106, PHIL 120, SOCI 116, SOCI 160, SOCI 169, TECH 198 6

Areas of Emphasis 12
Majors also select an area of emphasis, which will consist of four courses about a major region of the world, e.g. Europe, Asia, Latin America, or Africa. Students must consult with the GS advisor and several professors to define their region and determine that enough courses exist at SJSU to satisfy this requirement.

Electives 16

Total Units Required 120

Minor - Global Studies

Students may complete a minor in Global Studies by completing 15 hours, including either GLST 1A or GLST 1B and GLST 179 and GLST 189, plus two courses chosen from the four breadth areas that do not count for a major. They must also demonstrate intermediate level speaking and writing ability in a language other than English, as measured by the SJSU Department of Foreign Languages.

Semester Units

GLST 001A or GLST 001B (3); GLST 179 and GLST 189 (6); 6 hours in breadth requirements (6)

Total Units Required 15

Health Professions Division

College of Applied Sciences and Arts

MacQuarrie Hall 433
408-924-2900

Curricula

Minor, Health Professions

Minor, Complementary and Alternative Health Practices

Certificate, Complementary and Alternative Health Practices

Introduction

The Division of Health Professions offers two minors, a certificate program, and courses and learning experiences which contribute to the understanding of health needs of individuals and society. The division is based on the coordination of programs in the Departments of Health Science; Nutrition, Food Science and Packaging; Occupational Therapy; and the School of Nursing. Other participating departments are Kinesiology and Hospitality, Recreation and Tourism Management. The goals of the division are to:

1. Provide programs of study that integrate a variety of health-related disciplines to prepare students for careers in the health professions;

2. Contribute to the liberal education of students through courses designed to provide an understanding of human health, fitness and health delivery systems; and

3. Meet the continuing education needs of health professionals.

The curriculum is based on cooperation, coordination and collaboration among departments in the division to offer lectures, seminars, research and field experiences taught by faculty who represent a broad range of professional experience and backgrounds. This multidisciplinary emphasis provides for the study of human health as an interaction of biological-psychological-sociological systems. Collaboration extends beyond the curriculum to strengthen grant and research activities, as well as coordination of faculty and student activities in general.

The division seeks to prepare health practitioners who are technically competent and who are effective in a variety of clinical, agency and community settings. Clinical affiliations and on-site experiences are essential to the Health Professions Program and, as such, are a coordinated effort among departments. Local communities, their agencies, and organizations are a valuable resource to the division to provide an understanding of community needs and health delivery systems. Particular emphasis is placed on an abundant cultural and social diversity for which new and alternative health delivery and professional strategies are required.

The recruitment, retention and graduation of students traditionally under-represented in the health professions provide foci for work in the division. Emphasis is on individual advisement, counseling and the encouragement of student and faculty interaction.

Course offerings are flexible to respond to societal and professional concerns. Consult the schedule of classes or an advisor for courses available under the Health Professions Program and under individual departments within the division.

Minor - Complementary and Alternative Health Practices

The Complementary and Alternative Health Practices Minor program 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.

Semester Units

Required Courses 9

These courses should be taken as early as possible.</cstyle:>
HPRF 134 and HPRF 135 (6); BIOL 054, PHIL 111 or ANTH 108 (3)

Electives 6

Choose courses from two different areas. HPRF 180 may be used for any area depending upon topic studied.</cstyle:>
Alternative Medical Systems: PHIL 111, ANTH 108
Mind/Body Interventions: KIN 069, HRTM 197, RELS 122, RELS 123
Biological-Based Therapies: BIOL 054, NUFS 104A, NUFS 105
Manipulative and Body-Based Methods: KIN 050, KIN 061A

Total Units Required 15

Note: HPRF 180 may be used for any area depending on topic studied.

Certificate - Complementary and Alternative Health Practices

The certificate program in Complementary and Alternative Health Practices requires completion of the courses indicated above for the minor (9 units required, 6 units elective). This program is designed for non-matriculated students who are interested in this area of study.

Minor - Health Professions

A minor in Health Professions provides all students with the opportunity to gain a breadth of knowledge and understanding of the challenging health issues facing a multicultural society.

Semester Units

Required Core Courses 3

This course should be taken as early as possible.</cstyle:>
HPRF 135

Electives 12

Choose courses from at least three of the following five areas.</cstyle:>
Gerontology: GERO 102, GERO 108, GERO 111, GERO 117, GERO 127, GERO 137
Health Science: HS 102, HS 104, HS 159, HS 161, HS 162, HS 165
Nursing: NURS 020, NURS 180 (or other courses with Director of Health Professions approval)
Nutrition, Food Science and Packaging: NUFS 008, NUFS 009, NUFS 106A, NUFS 116
courses with Director of Health Professions approval
Other Health-Related Areas: HPRF 134, KIN 069, KIN 155, KIN 156, KIN 169, KIN 188, HRTM 110, HRTM 112, HRTM 185, HRTM 198 (or other courses with Director of Health Professions approval)

Total Units Required 15

Other courses may be approved by the Director of Health Professions.

Health Science Department

College of Applied Sciences and Arts

Division of Health Professions

MacQuarrie Hall 407
408-924-2971
www.sjsu.edu/healthscience

Professors

B. Burt Gerstman
Edward M. Mamary
Daniel P. Perales
Kathleen M. Roe, Chair

Assistant Professors

Anne Demers
Brian R. Grossman
Van M. Ta

Curricula

BS, Health Science
BS, Health Science, Concentration in Health Professions
BS, Health Science, Concentration in Health Services Administration
BS, Health Science, Concentration in Gerontology
Minor, Health Science
MPH, Master in Public Health

Introduction

Health Science is the multidisciplinary study of community health, health services, disease prevention, and health promotion throughout the life span and around the world. Health Science students, both undergraduate and graduate, study health issues from scientific, global, social, cultural, ecological, and multigenerational perspectives. Our undergraduate program, nationally recognized MPH program, minor, and general education classes prepare students for a broad range of careers in the health and social service professions, and a wide variety of other fields that impact individual and community health. Students, faculty, staff, alumni, and community partners work together closely, in the classroom and in the field, to build healthy communities and stimulate lifelong learning.

Careers

The flexibility offered by a degree in Health Science, 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. Students may focus on general professional skills or develop expertise in a particular content area, such as health and aging, HIV/AIDS, college health, the environment, or mental health.

Internships, Field Work, and Mentoring

Practical experience is a key part of the Health Science Department curriculum. Undergraduates may complete a final-semester internship, along with a seminar focused on professional preparation and career skills. Graduate students complete 400 hours of field work under the guidance of a field work mentor. At both levels, students work as professionals in an exemplary agency, learning on the job while applying knowledge and skills from the classroom. In addition to field work and internships, mentoring is fostered through the department's extensive alumni network, service learning opportunities, class guests, and professional development activities.

Faculty and Staff

The Health Science faculty is nationally known for its public health leadership, commitment to students, scholarship, and service. Full-time faculty members are involved in research, community projects, and consultation, all of which they integrate into class activities. The combined scholarship, publications, and projects of the faculty demonstrate a deep commitment to prevention, health, ethics, and social justice. Faculty members are frequent speakers, trainers, and advisors on community organizing, coalitions and partnerships, research or program design, evaluation, aging, and the future of public health. They are active members of local and national professional organizations, which create invaluable opportunities to students for networking, conference participation, and career development.

The Health Science Department is fortunate to have the talents and expertise of many part-time faculty members. These individuals have full careers in health science professions, but also enjoy teaching the next generation of health professionals. Their perspectives keep our courses current and offer students additional opportunities for mentoring and professional development. Our excellent staff is knowledgeable, organized, and friendly.

The Undergraduate Program

The Health Science Department offers undergraduate courses that combine rigorous analytical training with hands-on experiences both in and out of the classroom. Students pursuing the Bachelors of Science degree in Health Science begin with courses that lay a foundation for understanding the multiple dimensions of health (physical, emotional social, environmental, and spiritual) and the scientific basis for understanding health at the population level (epidemiology and biostatistics). Courses early in the major also emphasize the team building and program planning skills necessary for work in our contemporary multicultural society. Students may select one of our concentrations - Gerontology or Health Services Administration, or combine their Health Science degree with a minor of their choice. A concentration in Health Professions is available for students with selected allied health certification. Peer advisors, department orientations and faculty help students decide on the combination that best meets their interests and career goals.

Each of the Health Science options emphasizes a particular content area. The basic Health Science curriculum emphasizes the populations, skills, and issues that prepare a graduate for work in a wide variety of fields related to community health. Health Science plus a Minor allows individual study in areas complementary to the Health Science curriculum. The Gerontology Concentration helps students prepare for careers with the growing aging population, including health care, social services, and long term care. The Health Services Administration Concentration provides entry-level training in the administration, design, financing, and delivery of health care in the United States. The Health Professions Concentration facilitates articulation between allied health certification (i.e. dental hygiene, primary care associate, paramedic) and the Health Science bachelor's degree. Internships under the guidance of an experience health professional are required for the concentrations.

The Health Science minor is an excellent complement for degrees including journalism and mass communications, human performance, nutrition and food science, business, psychology, and the sciences. The minor is also very helpful for students preparing to apply to medical, pharmacy, dental, public health, or other health professional preparation programs. Students taking Health Science general education courses learn valuable skills for personal health, community health promotion, and multicultural communication.

The very active Health Science Undergraduate Student Association (HS-USA) coordinates an annual calendar of social, educational, and service opportunities for students in the department and the broader community. Through these activities, students network with professionals in the field (Careers in Gerontology and Health Science Career Weeks), provide service to the community through our partnerships with McKinley Elementary School and CommUniversity, and attend local, regional, and national conferences. The HS-USA is also very involved with the faculty, collaborating on joint projects and advising on curriculum and program development.

Community College Transfers

Many Health Science students begin their studies at a community college. Courses evaluated as equivalent to SJSU courses in the lower division are transferable. All transfers must be reviewed and approved by a Health Science advisor. Information on transfer possibilities can be found at the department's website http://www.sjsu.edu/healthscience.

Master in Public Health Program

The SJSU MPH program has been continuously accredited by the Council on Education for Public Health since 1974. The MPH program is firmly rooted in public health values and health education practice, including health, equity, diversity, empowerment, integrity, dignity, and social justice.

MPH faculty are nationally recognized leaders in the field of health education and health promotion. They publish regularly in professional journals and contribute to the scholarship of the field through research, community-based projects, policy advocacy, professional leadership, training, and public speaking. The MPH curriculum reflects this expertise. Together, students faculty, and community partners are actively involved in health education and public health activities throughout Northern California and beyond.

The MPH program is offered in two modes: campus (regular session) and distance (special session). Both modes follow the same curriculum and meet the same educational objectives. Campus students may enroll on a full-time or part-time basis and may take more than two years to complete the degree. Distance students must complete the MPH degree in 24 months. The distance courses are accessed via the Internet through synchronous and asynchronous learning platforms. Additional information on both program modes can be found on the Health Science Department website http://www.sjsu.edu/healthscience/.

The five core areas of public health provide the intellectual framework for advanced study of community health education at the master's level. Students take courses in contemporary public health practice, epidemiology, social and behavioral science theory, environmental health, public health statistics, and health services organization. These courses, along with the advanced specialty courses in community health education, provide numerous and reinforcing opportunities for students to master the competencies of advanced level practice established by the health education profession. Specialty courses emphasize program planning and evaluation, community organization, multicultural communication, groups and training, and research design.

All MPH students complete 400 hours of fieldwork after the first year of course work. Fieldwork allows the student to apply what has been learned in class through an intensive, high level professional experience under the guidance of a mentor. Students may choose from a wide range of fieldwork settings and opportunities, including local and county health departments, community clinics, Kaiser Permanente, foundations, research organizations, and community based organizations. In recent years, MPH students have arranged fieldwork outside of the United States including Mexico, Australia and France.

All students must successfully complete the university's culminating experience graduation requirement. Students in the campus mode may choose either a Graduate Project, Master's Thesis or Comprehensive Exam. Students in the distance mode must complete the Comprehensive Exam. The MPH program concludes with a capstone course in public health leadership.

The MPH curriculum is enhanced by ongoing professional development activities implemented by the MPH Student Association (MPH-SA). Student leaders work with faculty members to plan, implement, and evaluate the new student orientation, annual training on sexual diversity and health, global health issues and careers forum, and master classes with visiting scholars. Together, the undergraduate and graduate students plan the department's gala convocations that celebrate the achievements of each year's graduates. Courses offered through the MPH Program may only be taken by MPH students or by instructor approval.

Further information on the MPH program can be found at the department's website.

BS - Health Science

Semester Units

General Education Requirements 39
Of the 51 units required by the university, 12 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 9
HS 001, HS 015 and HS 067

Requirements in the Major 42-51

Required Courses 30
HS 102, HS 104, HS 135, HS 158, HS 159, HS 161, HS 162, HS 164, HS 165 and HS 167

Additional Courses 12-21

Selected with major advisor approval. Choose one of the following options:</cstyle:>

Option One 21
GERO 107 plus 18 units of Health Science, Gerontology courses; internship is optional

Option Two 12-18
Minor

Electives 19-28
Additional courses selected in consultation with major advisor

Total Units Required 120

Note: UNVS 015C may be used in lieu of the statistics course required by this major through the Summer 2014.

Students selecting this concentration must earn a grade of C or higher in each of the three courses required in the Preparation for the Major (HS 001, HS 015, and HS 067).

BS - Health Science, Concentration in Gerontology

Semester Units

General Education Requirements 39
Of the 51 units required by the university, 12 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 9
HS 001, HS 015 and HS 067

Requirements in the Major 51

Required Courses 30
HS 102, HS 104, HS 135, HS 158, HS 159, HS 161, HS 162, HS 164, HS 165 and HS 167

Concentration Core Courses 21
GERO 107, GERO 108, GERO 117, GERO 118, GERO 122, HS 166A and HS 166B

Electives 19
Additional courses selected in consultation with major advisor

Total Units Required 120

Note: UNVS 015C may be used in lieu of the statistics course required by this major through the Summer 2014.

Students selecting this concentration must earn a grade of C or higher in each of the three courses required in the Preparation for the Major (HS 001, HS 015, and HS 067).

BS - Health Science, Concentration in Health Professions

	Semester Units
General Education Requirements	48
Of the 51 units required by the university, 3 may be satisfied by specified major and support requirements. Consult major advisor for details.	
American Institutions	(6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.	
Physical Education	2
Requirements in the Major	30
HS 102 and HS 104 (6); HS 107 or HS 135 (3); HS 158, HS 159, HS 161, HS 162, HS 164, HS 165 and HS 167 (21)	
Major Electives	21
Seven semester courses (or equivalent), package specific to each approved allied health program, credited to Health Professions Concentration	
Additional Electives	19
Additional courses selected in consultation with major advisor	
Total Units Required	120

Note: UNVS 015C may be used in lieu of the statistics course required by this major through the Summer 2014.

BS - Health Science, Concentration in Health Services Administration

	Semester Units
General Education Requirements	39
Of the 51 units required by the university, 12 may be satisfied by specified major and support requirements. Consult major advisor for details.	
American Institutions	(6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.	
Physical Education	2
Preparation for the Major	9
HS 001, HS 015 and HS 067	
Requirements in the Major	51
Required Courses	30
HS 102 and HS 104 (6); HS 107 or HS 135 (3); HS 158, HS 159, HS 161, HS 162, HS 164, HS 165 and HS 167 (21)	
Concentration Core Courses	21
BUS 020N (3); BUS 140, BUS 150 or BUS 160 (3); HS 166A, HS 166B, HS 170, HS 171 and GERO 117 (15)	
Electives	19
Additional courses selected in consultation with major advisor	
Total Units Required	120

Note: UNVS 015C may be used in lieu of the statistics course required by this major through the Summer 2014.

Students selecting this concentration must earn a grade of C or higher in each of the three courses required in the Preparation for the Major (HS 001, HS 015, and HS 067).

Minor - Health Science

	Semester Units
HS 001, HS 104, HS 107, HS 161 and HS 162 (15)	
Total Units Required	15

Graduate Admission MPH Programs

New students are admitted to the MPH program only once a year, to begin course work during the fall semester. Applicants must choose between one of two instruction modes: campus and distance. For campus applicants, applications are accepted between November 1 and March 15th. Applications received after March 15th will not be eligible for review. To be considered for early review and admission, completed applications must be received by February 15th. For distance applicants, applications are accepted between November 1 and April 15th. Applications received after April 15th will not be eligible for review.

Applying to the MPH program requires two parallel, but separate, application processes. Both campus and distance applicants must submit:

1. A university application through the CSU Mentor website. Please follow all the instructions on the CSU Mentor website for submitting required materials to SJSU.

2. Application materials described below to the MPH program in the Health Science Department:

- A cover letter.
- A Statement of Purpose.
- A resume of work and volunteer experiences.
- At least two letters of recommendation.
- Copies of all college transcripts.
- Copy of your SJSU graduate admission application.
- Official report of your GRE certificate. Specialty tests are not required.
- Completion of a web-based MPH Program Application Data Form (the web link can be found in the current MPH Application Packet for each program).

While this is a parallel admissions process, applicants must be admitted by the SJSU Office of Graduate Studies and Research before being considered by the MPH admission committee.

More detailed information on both the campus and distance modes of instruction can be found in Application Packets, which can be downloaded from the Health Science Department website www.sjsu.edu/healthscience/.

MPH - Master's in Public Health

	Semester Units
Required Courses	37
HS 200, HS 201, HS 261, HS 262, HS 263, HS 265, HS 267, HS 271, HS 272, HS 276, HS 277, HS 293 and HPRF 295 (34); Option 1: 3 additional graduate units approved by the department (3) -or- Option 2: 3 additional graduate units selected from either HS 269, 298, or 299, approved by the department (3)	
Required Practicum	5
HS 291A, HS 291B and HS 291C	
Total Units Required	42

Note: HS 269, Applied Data Analysis, is required for all non-project/non-thesis students as part of their culminating experience.

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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape

Note: Masters Theses and graduate projects may only be undertaken by MPH campus students upon departmental approval and will require additional units.

History Department

College of Social Sciences

Dudley Moorhead Hall 134
408-924-5500
www.sjsu.edu/depts/history

Professors

John Bernhardt
Michael Conniff
Steven M. Millner
Mary Pickering
E. Bruce Reynolds
Jonathan P. Roth
George Vasquez

Associate Professors

Patricia Lopes Don
Glen Gendzel
Patricia Evridge Hill, Chair

Assistant Professors

Ruma Chopra
Libra Hilde

Curricula

BA, History
Minor, Ancient and Medieval History
Minor, Asian History
Minor, European History
Minor, Jewish Studies
Minor, Latin American History
Minor, Military History
Minor, United States History
Minor, General History
Minor, Area Studies
MA, History
MA, History, Concentration in History Education

Introduction

Knowledge of the past is a prerequisite for understanding the present and preparing for the future. The History Department at San José State University offers courses at both the undergraduate and graduate levels, designed to enable students to comprehend the forces that have shaped the United States and the world.

In addition to producing teachers and historians, the History Department prepares students for other careers. History students develop critical thinking skills and learn to write clearly and precisely, abilities applicable in a wide variety of occupations. History is a particularly appropriate undergraduate major or minor for students who want to enter law or medical schools or other professional programs.

Qualified majors are eligible to participate in the honors program. Outstanding student research papers are published in the journal *Passports*, and each spring students compete for departmental scholarships. The active local chapter of Phi Alpha Theta, the history honor society, promotes academic and social activities for students.

At the graduate level, our primary fields of study are American History, Ancient-Medieval History, Modern European History, and World History. To earn the MA degree each student must also meet a foreign language or research skill requirement and either complete a master's thesis or, in fields where it is offered, a comprehensive examination. For the MA Concentration in History Education see below. Graduate students are eligible to apply for departmental scholarships. Graduate courses are offered in the late afternoon or evening for the convenience of working students.

History graduate students have won the university's Outstanding Thesis competition. MA graduates have been accepted into PhD programs ranging from Stanford University and University of California campuses to such diverse institutions as the New School for Social Research, Tulane University and Oxford University. Among our distinguished alumni is Professor Linda Cooke Johnson of Michigan State University, former editor of *The Historian*, the national journal of the Phi Alpha Theta Honor Society.

In addition to a strong commitment to hands on teaching, History Department faculty members have had works published by Oxford University Press, Cambridge University Press and the University of California Press, among others.

Faculty and students conducting research draw upon the special resources of the University Library, noted for its strong collections in California and military history. A recently established Legislators Archive is centered around the voluminous papers of longtime Congressman Don Edwards. Other research facilities located in the immediate area are the San José Historical Museum, the California History Center at DeAnza College and the Hoover Institution at Stanford University.

Advising

The History Department has undergraduate and graduate advisors and students are encouraged to call or visit during regular office hours. We encourage students to maintain close contact with their advisor to ensure that requirements are being met.

Transfers

Community college courses evaluated as equivalent to SJSU courses in the lower division are transferable. This includes the six-unit lower division requirement in the history major.

Upper division courses in history completed at four-year institutions can also be applied to the requirements for the history major. However, 12 units of course work must be earned on the SJSU campus for the major; six for the minor.

Graduate Applicants

An undergraduate major in history is not required for entry into the graduate program, but an applicant with insufficient preparation may be required to maintain a 3.0 GPA in up to 15 units of upper division history courses before being admitted as a classified graduate student.

In addition to submitting an application to Student Services, graduate applicants should have letters of recommendation, a writing sample, a statement of purpose, and unofficial transcripts sent directly to the History Department's graduate advisor.

Honors Program in History

A student may qualify for admission to the History Department honors program provided he or she is a history major or minor or a Social Science major who has completed 15 upper division units in history. To apply to History 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, the students must complete HIST 101 and 180H, each with a grade of "A" or "B" or the equivalents. HIST 101 and HIST 180H normally will be open only to qualified seniors.

BA - History

Courses offered under this program are planned 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.

Semester Units

General Education Requirements 48
Of the 51 units required by the university, 3 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Requirements in the Major 48

Lower Division 15
HIST 001A and HIST 001B or HIST 010A and HIST 010B (6); HIST 015A and HIST 015B (*) or HIST 020A and HIST 020B (6); HIST 099 (3)

Major Requirements 33
HIST 100W and HIST 102 (6); 27 units of upper-division history chosen from three fields: (1) premodern, (2) modern, and (3) United States, with at least six units non-Western history in fields 1 and 2, and at least three units pre-1900 history in field 3 (27)

Electives and/or Minor 22
Minor recommended, but not required; consult history advisor

Total Units Required 120

(*) 6 units of the GE requirement can be fulfilled by choosing the HIST 015A and HIST 015B courses among the major requirement.

A checklist of requirements is available in department office.

Minor - Ancient and Medieval History

Semester Units

HIST 010A and HIST 010B (6)
Courses in upper division Ancient and Medieval History (9)

Total Units Required 15

Minor - Asian History

Semester Units

HIST 001A and HIST 001B (6)
Courses in upper division Asian History (9)

Total Units Required 15

Minor - European History

Semester Units

HIST 010A and HIST 010B (6)
Courses in upper division European History (9)

Total Units Required 15

Minor - Jewish Studies

See index.

Minor - Latin American History

Semester Units

HIST 001A and HIST 001B (6)
Courses in upper division Latin American History (9)

Total Units Required 15

Minor - Military History

Semester Units

HIST 130A and HIST 130B (6)
Courses in upper division Military History (9)

Total Units Required 15

Minor - United States History

Semester Units

Courses in upper division U.S. History (15)

Total Units Required 15

Minor - General History

Semester Units

HIST 001A and HIST 001B or HIST 010A and HIST 010B (6)
Upper division electives from two areas exclusive of lower division (breakdown of requirements available in department office) (9)

Total Units Required 15

Minor - Area Studies

The minor in Area Studies provides an opportunity for concentrated study in the history, politics, economics, geography, or culture one of four designated regions of the world.

With the consent of the advisor for the Area Studies minor, 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 courses from a general list. Programs of study for other coherent regions (e.g., Pacific Rim, Eastern Europe, etc.) may be worked out in consultation with the advisor. Courses taken to satisfy requirements of any major may not be counted toward the minor.

Semester Units

Three or four courses from one of the designated regions (9-12)
One to two general courses (3-6)

Total Units Required 15

MA - History

Requirements for Admission to Classified Standing

Admission to classified standing for the MA - History requires that the undergraduate preparation of the applicant be comparable to that of a history major for the BA degree at San José State University. Included in this preparation must be one upper division or graduate course in historical method and a course in historiography may be required. The applicant who does not have this preparation must remove all deficiencies. Students who have a baccalaureate degree in a field other than history will be required to complete up to 15 units in upper division history courses. Units thus taken will not be counted toward the minimum 30 units required for the MA - History. Requirements and regulations change; thus, the department web site always contains the most current information; please reference it.

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 which must be taken. Upon completing these requirements, the student must file a petition for a change of status to classified standing.

University Requirements

The applicant must also comply with all requirements of the university as outlined in this catalog and stated in subsequent policy changes (this refers both to admission and graduation procedures). 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape/index.htm.

Completing the Course Requirements for the MA - History

Following admission to the university and the department, the student should consult the history department website regarding degree requirements and a proposed degree program. Courses in the program are divided into fields. A Candidate must complete from 18-21 semester units of course work in one of the following primary fields of study: the United States, Modern Europe, and Ancient-Medieval. The remaining 9-12 units may be taken in any field of history. Regardless of the primary field, students may apply one chronologically appropriate World History colloquium (History 220) to his or her primary field. **All students must retain a 3.0 GPA average to remain in the program**.

Semester Units

Plan A (with Thesis) 30

Professorial nomination is required.</cstyle:>

Colloquia 6-12

Ancient and Medieval Primary Field 3-6
One 209 course (two recommended)

European Primary Field 3-6
One 211 course (two recommended)

Master's Thesis 6
HIST 299

Other 200 Level Courses In History 3-9
One seminar is required (two recommended)

Other Courses 9-12
100 and/or 200 level courses in history

Plan B (without Thesis) 30

Colloquia 12-15

U.S. History 9
HIST 210

European Primary Field 3-6
One or two 211 courses

Other 200 Level Courses In History 6-12
One seminar is required (two recommended)

Additional Courses 9-12
Additional 100 and/or 200 level courses in history or other allied fields

Final Examination
Completion of the final written comprehensive examination

Total Units Required 30

Thesis (Plan A) and Examination (Plan B) Options

Students must design their course of study with the final exercise of the degree in mind. Please note the field specific regulations that follow:

All students who choose a primary field in Ancient and Medieval history currently must write a thesis (Plan A), for no examination (Plan B) option is available

Students who choose a primary field in United States or Modern European history must take and pass a culminating examination (Plan B). On the exam the student is expected to demonstrate considerable breadth and depth of knowledge, a familiarity with historiographical issues, and to follow 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.

In some exceptional cases, students in United States or Modern European history may substitute a thesis (Plan A) for this test. 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 still 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 in any capacity. Finally, permission to write a thesis is also contingent on finding two other professors, who are willing to be second and third readers respectively; they also serve entirely at their own discretion. 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, in the opinion of the three readers, the candidate has shown him- or herself incapable or unwilling to write an acceptable thesis in a reasonable amount of time. In that situation the student will be required to take the Plan B comprehensive examination.

Language Requirement

All candidates for the general MA degree 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:

1. 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 dictionary allowed.

2. By taking two years of a foreign language at a university or community college. An average grade "C" must have been attained, and the course work completed within five years of admission to the university.

3. If your primary concentration is Ancient-Medieval, you may also fulfill this requirement by taking one year of Greek and one year of Latin.

4. By taking and passing the Educational Testing Service Graduate Foreign Language Exam.

Graduate Division Approval of Candidacy and Degree Program

At least one semester before a candidate expects to graduate, the student must complete an Advancement to Candidacy Application delineating the entire degree program, that is, the courses that the student has completed or expects to complete toward the MA. The candidate must submit the form to the Graduate Advisor and then to Graduate Studies and Research 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.

MA - History, Concentration in History Education

Advisors: Dr. Patricia Evridge Hill, Dr. Patricia Lopes Don

The MA History, Concentration in History Education is designed for middle and secondary school social science teachers. The curriculum broadens the candidate's knowledge of U.S. and World History. In addition, the program increases the candidate's academic proficiency in history subjects and his/her professional competence in special areas of interest within the field of history and social science education. This is a terminal degree. Candidates who plan to pursue more advanced graduate training in history should apply to the regular Masters degree program outlined above.

Requirements for Admission to Classified Standing

Admission to classified standing for the MA History, Concentration in History Education requires that the student has completed a Single Subject Social Science Teaching Credential, has completed a BA in History, or passed the Social Science CSET Examination.

Completing the Course Requirements for the MA - History, Concentration in History Education

Following admission to the university and to the department, the student should consult with a graduate advisor to complete a program planning guide of courses needed to complete the degree. Courses are divided into core or additional fields. The core field is either U.S. or World History, with 18 semester units. Additional courses are twelve semester units of course work, including one required course in a history/social science project. The MA - History, Concentration in History Education is a Plan B course of study, which means that the candidate completes a curriculum project, develops a reading list in consultation with a department professor, and passes a written examination (see above for explanation of the Plan B examination).

	Semester Units
Core Field	18
Colloquia	9
Three colloquia in either United States history (History 210 series) or world history (History 220 series)	
Other Core Field Courses	9
Three other 200 level or 100 level courses in the core field	
Additional Courses	12
Curriculum Project	3
HIST 205	
Other Courses	9
Three other 200 level or 100 level courses in history or other fields	
Total Units Required	30

Note: at least six of the ten courses of the degree must be 200 level courses and students may take only a total of four 100-level courses in their program.

Completion of the final written comprehensive examination.

Procedures for approval for the MA in History, Concentration in History Education are the same as for the general Masters degree except that, for this concentration, **no foreign language is required**.

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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape/index.htm.

Hospitality, Recreation and Tourism Management

College of Applied Sciences and Arts

Spartan Complex Central (SPXC) 50
408-924-3000 (Voice)
408-924-3061 (Fax)
www.sjsu.edu/hrtm/

Professors

Kate Sullivan
Randy J. Virden, Chair

Associate Professors

Tsu-Hong Yen

Assistant Professors

Ranjan Bandyopadhyay
Jocelina Santos

Curricula

BS, Hospitality, Tourism and Event Management
BS, Recreation
BS, Recreation, Concentration in Recreation Management
BS, Recreation, Concentration in Therapeutic Recreation
Minor, Recreation
Minor, Hotel and Restaurant Management
MS, Recreation
MS, Recreation, Concentration in International Tourism

Introduction

The Hospitality, Recreation and Tourism Management Department is home to two baccalaureate degree programs (Recreation & Hospitality, Tourism and Event Management) one masters degree program (Recreation), and two minors (Hotel & Restaurant Management and Recreation). The faculty consists of full-time scholars and professionals with strong hospitality, recreation, and tourism management backgrounds. These individuals have the skills and experiences to weave theory and practice in ways that enhances learning through inclusion of real-life problems and global issues facing their respective fields today. Our location in the heart of Silicon Valley enables the faculty to partner with area professionals, community organizations, and businesses to provide extraordinary internships for students and create pathways for graduates to their chosen careers.

Bachelor of Science - Hospitality, Tourism and Event Management

This innovative and interdisciplinary program includes core course work in the department and supporting course work from SJSU's business and nutrition programs. Elective course work enables students to craft the breadth and depth of their studies to best match their career objectives. There are a wide range of careers for students graduating with a degree in Hospitality, Tourism and Event Management including: Hotel/Resort General Manager, Financial Controller, Catering Coordinator, Meeting Planner, Sales Director, Marketing Manager, Conference/Tradeshow Manager, Banquet and Events Coordinator, Restaurant Manager, Contract Food Service Manager, Food and Beverage Manager, Human Resources Manager, Tourism Specialist, Travel Consultant and Information Systems Specialist.

Bachelor of Science - Recreation

This degree program, founded in 1947, has a core accredited by the National Recreation and Park Association. All undergraduates complete a well-rounded set of core courses. In addition, two concentrations are offered: Recreation Management and Therapeutic Recreation. Graduates completing these concentrations are eligible to apply for national and state certification. Graduates find employment with federal, state, county, and city park and recreation agencies; college unions and campus recreation centers; non-profit agencies; armed forces; hospitals, rehabilitation centers, nursing facilities, schools; commercial, resort, theme parks and tourism enterprises; and festival and special event planning/management.

Master of Science - Recreation

Graduate students complete a common set of core courses and can then choose to design a course of study suited to their career objectives. In addition, all students complete either a professional project or a thesis. Our program provides those interested in a career change with the opportunity to pursue careers in a wide array of recreation settings, tourism and commercial businesses, government agencies and consulting organizations.

Hotel and Restaurant Management Minor

This minor (15 units) is designed for those who would like to apply the skills developed in their major (business, accounting, nutrition, law, real estate, marketing, sales, global studies, management, MIS, etc.) in a hotel and/or restaurant setting.

Recreation Minor

The minor in Recreation (15 units) is designed to complement many degree programs in other departments at the University such as business, early childhood education, environmental studies, gerontology, health sciences, hospitality management, justice studies, kinesiology, and public relations.

BS - Hospitality, Tourism and Event Management

	Semester Units
General Education Requirements	48
Of the 51 units required by the university, 3 may be satisfied by specified major and support requirements. Consult major advisor for details.	
American Institutions	(6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.	
Physical Education	2
Supporting Courses for the Major	12
BUS 020N, BUS 160 and HRTM 100W (9); BUS 090 or STAT 095 (3)	
Requirements in the Major	58
Core Courses	39
HRTM 001, HRTM 011, HRTM 012 and HRTM 065 (10), HRTM 102, HRTM 104, HRTM 105, HRTM 107, HRTM 108, HRTM 134, HRTM 140 and HRTM 186 (24) and HRTM 191A and HRTM 191B (5)	
Electives	19
9 units of required emphasis electives (9); 9 units of major electives in consultation with academic advisor (9); 1 unit free elective (1)	
Total Units Required	120

Note: UNVS 015C may be used in lieu of the statistics course required by this major through the Summer 2014.

BS - Recreation

Semester Units

General Education Requirements 48
Of the 51 units required by the university, 3 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Supporting Courses 3
HRTM 100W

Requirements in the Major 38
HRTM 090, HRTM 110, HRTM 112, HRTM 132, HRTM 135, HRTM 136, HRTM 137, HRTM 157, HRTM 160, HRTM 170A and HRTM 170B

Electives 29
Advisor approved Minor (18) and electives (11); or electives (29) (up to 12 outside HRTM).

Total Units Required 120

BS - Recreation, Concentration in Recreation Management

Semester Units

General Education Requirements 48
Of the 51 units required by the university, 3 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Supporting Courses 6
HRTM 100W and BUS 020N

Requirements in the Major 64

Core Courses 38
HRTM 090, HRTM 110, HRTM 112, HRTM 132, HRTM 135, HRTM 136, HRTM 137, HRTM 157, HRTM 160 and HRTM 170A (28); HRTM 170B or HRTM 170C (10)

Recreation Management 26
HRTM 105, HRTM 107, HRTM 134, HRTM 150 and HRTM 175 (15); 11 units of electives in consultation with academic advisor (11)

Total Units Required 120

BS - Recreation, Concentration in Therapeutic Recreation

Semester Units

General Education Requirements 45
Of the 51 units required by the university, 6 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Supporting Courses 16
HRTM 100W, PSYC 001, PSYC 110, BIOL 065 and HS 015

Requirements in the Major 57

Core Courses 38
HRTM 090, HRTM 110, HRTM 112, HRTM 132, HRTM 135, HRTM 136, HRTM 137, HRTM 157, HRTM 160 and HRTM 170A (28); HRTM 170B or HRTM 170C (10)

Therapeutic Recreation 19
HRTM 194, HRTM 197 and HRTM 198 (9); 10 units of electives in consultation with academic advisor (10)

Total Units Required 120

Minor - Hotel and Restaurant Management

Semester Units

Required Core 6
HRTM 011 and HRTM 102

Electives 9
Complete nine (9) units in consultation with department advisor

Total Units Required 15

Minor - Recreation

Semester Units

Required Core 6
HRTM 090 and HRTM 097A

Required Core 9
Complete nine (9) upper division units in consultation with department advisor

Total Units Required 15

Graduate Programs in Hospitality, Recreation and Tourism Management

Graduate Program Advisor: Dr. Tsu-Hong Yen

General Requirements for Admission

Applicants to the graduate program must complete all sections of the CSU online application (www.csumentor.edu) 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.

The department will not be admitting students into the Master of Science in Recreation in AY 2012-2013. Please check with department for subsequent admission cycles.

Requirements for Admission to Candidacy for the MS - Recreation

In addition to university requirements for admission to candidacy for 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 Vice President for Graduate Studies and Research; and competency in written English must be demonstrated at least one semester prior to submission of the admission to candidacy form. Please refer to the SJSU catalog section titled "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape.

MS - Recreation

	Semester Units
Core Courses HRTM 200 and HRTM 202	6
Electives Selected in consultation with graduate advisor.	18
Culminating Experience HRTM 298 and HRTM 204; HRTM 299	6
Total Units Required	30

MS - Recreation, concentration in International Tourism

	Semester Units
Core Courses HRTM 200 and HRTM 202	6
Required Courses HRTM 215, HRTM 216 and HRTM 218	9
Electives Selected in consultation with graduate advisor.	9
Culminating Experience HRTM 298 and HRTM 204; HRTM 299	6
Total Units Required	30

Humanities and the Arts - Interdisciplinary Course

College of Humanities and the Arts

Introduction

The following interdisciplinary course is offered by the College of Humanities and the Arts to serve the various majors within the College.

Humanities Department

College of Humanities and the Arts

Clark Hall 419
408-924-4463

Professors

Mira Z. Amiras
Elna C. Green, Associate Dean
Scot M. Guenter
Hanns J. Hohmann
Christian Jochim, Chair
Richard E. Keady
Jennifer Rycenga
Susan von Rohr Scaff

Associate Professors

Marianina Olcott
Cynthia Rostankowski
Susan Verducci-Sandford

Assistant Professors

Todd Ormsbee
Chanh Cong Phan
Shantanu Phukan
Shannon Rose Riley

Curricula

BA, Humanities, Concentration in American Studies
BA, Humanities, Concentration in Asian Studies
BA, Humanities, Concentration in European Studies
BA, Humanities, Concentration in Liberal Arts
BA, Humanities, Concentration in Middle East Studies
BA, Humanities, Concentration in Religious Studies
BA, Creative Arts
BA, Creative Arts, Preparation for Teaching
BA, Liberal Studies, Concentration in Cross-Cultural Studies in Mexican and American Education
BA, Liberal Studies, Preparation for Teaching
Minor, American Studies
Minor, Asian Studies
Minor, Creative Arts
Minor, Humanities
Minor, Middle East Studies
Minor, Religious Studies

Introduction

The Humanities Department originally grew out of a desire to provide students with an integrated perspective on Western Civilization. In the late twentieth century, globalization resulted in a justifiable mandate that our students become aware of more than the western European canon, that they learn about the teachings of Islam, the values of Asian cultures and many other aspects of world culture which were once so distant as to not require attention in our curriculum. But the world has changed and it is now our responsibility to provide students with interdisciplinary perspectives on the great questions that have long preoccupied human beings, such as "who are we, where did we come from, and where are we going?" To acquaint students with the works of those who have grappled with ultimate questions, our courses integrate history, literature, philosophy, religion, politics, music and art. We concentrate on developing our students' analytical and expressive skills, their ability to read, write and think clearly. Our courses promote an appreciation of the arts and letters and their role in shaping modern society. Our students have won many awards for essays, poetry and short stores, and upon graduation they pursue a wide variety of occupations: law, journalism, librarianship, teaching, public service, social work and public relations.

The Humanities Department offers several different interdisciplinary programs. These include two lower division general education programs: the Humanities Honors Program and the American Civilization curriculum. It also provides four baccalaureate majors with related minor programs in Humanities, Creative Arts, Liberal Studies and Religious Studies as well as interdisciplinary minor programs in American Studies, Asian Studies, and Middle East Studies. For information not found below see the catalog index on American Studies, Asian Studies, Comparative Religious Studies, Creative Arts, and Middle East Studies.

Humanities Honors Program

The Humanities Honors Program 1A/B-2A/B is a four-semester survey course in the Background of Western Culture and Society (1A/1B) and Modern Cultural and Social Institutions (2A/2B) which provides students with 24 units of core General Education in a format that emphasizes the interrelationship of art, literature, philosophy and social institutions. Core General Education: Written Communication 1A/1B (6 units); Oral Communication (3 units); Arts and Letters (6 units); Comparative Systems (3 units); Social Issues (3 units); Critical Thinking (3 units). The program also satisfies graduation requirements in American Institutions (6 units).

The course is interdisciplinary and team-taught, and is organized chronologically from the Ancient World through the Middle Ages, the Renaissance (1A/B), the Early Modern and Contemporary periods (2A/B). In the last two semesters (2A/B) the course focuses upon the emergence and development of American culture and institutions within the broader framework of European, African and indigenous American and Asian history and cultures. Interdisciplinary by nature, the course is comprised of both team-taught lectures and singly led discussion seminars which require reading the classic works of Asian, African, European and American Cultures.

The goals of the course are not only to teach students about the origins and development of American civilization but to develop their analytical and expressive skills, to promote an appreciation of the arts and letters and to increase their understanding of the diverse peoples and societies which have played a role in shaping modern American social and cultural institutions.

Students who have an entering GPA of 3.0 and a verbal SAT score of 550 and above are automatically eligible. Those students who do not satisfy these criteria but would like to be considered for the Program may discuss waiving these criteria with the program coordinator, Dr. Cynthia Rostankowski, 924-4508; cynthia.rostankowski@sjsu.edu. {mailto:cynthia.rostankowski@sjsu.edu.}

American Studies Curriculum

The American Studies curriculum is a two-course, twelve-unit sequence which satisfies over one-fourth of all lower division general education requirements. The two courses, AMS 1A and 1B, provide the opportunity to study America's development and current conditions through themes such as the American dream, environmental issues, and ethnic and women's studies. The course consists of team-taught lectures, followed by smaller discussion seminars.

Courses are taught by faculty teams from different disciplines, which enable students to take their general education courses in an integrated way. American Studies 1A and 1B earn six units of general education credit in arts and letters (Area C) and six units in comparative systems and social issues (Area D). The two courses also satisfy the California Education Code American Institutions requirements in U.S. Constitution and California Government.

See American Studies program listing in the index for course descriptions of AMS 1A and 1B.

BA - Humanities

Advisors: Tamara Goldie, Scot Guenter, Christian Jochim, Todd Ormsbee, Cynthia Rostankowski, Jennifer Rycenga, Susan Verducci

Students pursuing the B.A. in Humanities will grow intellectually through a rigorous program of comparative cultural inquiry, investigating history, art, religion, thought and practice from multiple angles and across cultures and time. The degree in Humanities prepares students for life paths in international work, legal professions, civil service and government, non-profit and advocacy work, community organizing, social work, professional writing, journalism, business and marketing, teaching and education, scholarly careers, religious professions, and communications.

Students who major in Humanities will gain intellectual breadth through the required courses, while each concentration provides depth in a particular field. The concentrations enable students to focus their undergraduate studies in one of the following specializations: American Studies, Asian Studies, European Studies, Liberal Studies, Middle East Studies or Religious Studies. Each concentration provides students with a coherent area of study, but all share the aim of developing critical thinking skills, providing extensive research opportunities, and honing writing skills.

BA - Humanities, Concentration in American Studies

Semester Units

General Education Requirements 24-42
Of the 51 units required by the university, 9-27 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 6-24
AMS 001A and AMS 001B (12), HIST 001A and HIST 001B (6) or HIST 010A and HIST 010B (6) or HUM 001A and HUM 001B (12) and HUM 002A and HUM 002B (12)

Support for the Major 0-10
One year of college level foreign language or equivalent related to chosen emphasis

Requirements in the Major 43

Required Core Courses 10
HUM 085, HUM 101, HUM 160 and HUM 190

Comparative Courses 12
Choose four from the following: AMS 129, AMS 159, CA 173, HUM 119A, HUM 128, RELS 124, RELS 130, RELS 131

Additional American Studies Courses 9
Choose three in addition to any American Studies course chosen above.</cstyle:>
AMS 129, AMS 160, AMS 169, AMS 179, CA 172, RELS 162

Major Electives 12
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.</cstyle:>
Values and Ideas: AAS 185, JS 132, HIST 173, PHIL 112, POLS 121C, POLS 163, RELS 162, RELS 191
Arts & Popular Culture: AFAM 102, AFAM 161, ARTH 182A, ARTH 182B, COMM 169I, ENGL 161, ENGL 162, ENGL 163, ENGL 164, ENGL 168, MUSC 120, TA 103
Economics, History, Politics and Society: AFAM 159, ENVS 135, GEOG 140, HIST 173, HIST 174, HIST 175, HIST 176, HIST 177, HIST 178, HIST 179, HIST 181, HIST 187, POLS 154, SOCI 158
Gender, Family and Sexuality: AFAM 125, AFAM 152, HIST 188, LING 129, MAS 160, SOCI 150, SOCI 172, WOMS 155, WOMS 160
Race, Ethnicity and Immigration: AAS 125, AAS 175, AFAM 112, AFAM 142, ANTH 127, ANTH 164, COMM 172F, ENGL 165, ENGL 169, HIST 186, MAS 130, MAS 175, SOCI 160, SOCI 162

Electives and/or Minor 17-33

Total Units Required 120

BA - Humanities, Concentration in Asian Studies

Semester Units

General Education Requirements 45-48
Of the 51 units required by the university, 3-6 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 3
ARTH 070C, HUM 114 or RELS 070B

Support for the Major 0-10
One year of college level foreign language or equivalent related to chosen emphasis

Requirements in the Major 40

Required Core Courses 10
HUM 085, HUM 101, HUM 160 and HUM 190

Comparative Courses 12
Choose four from the following: AMS 129, AMS 159, CA 173, HUM 119A, HUM 128, RELS 124, RELS 130, RELS 131

Major Electives 18
Two courses from each of the following areas:</cstyle:>
Humanities: CHIN 102, CHIN 140, ENGL 123D, HUM 122, HUM 142, HUM 144, JPN 102, PHIL 104, PHIL 120
The Arts: ARTH 193B, ARTH 194A, ARTH 194B, ARTH 195, DANC 102, MUSC 148B
Social Science: ANTH 177, GEOG 160, HIST 109A, HIST 109B, HIST 110A, HIST 110B, POLS 145

Electives and/or Minor 17-30

Total Units Required 120

BA - Humanities, Concentration in European Studies

Semester Units

General Education Requirements 21
Of the 51 units required by the university, 9-30 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 6-24
HUM 001A, HUM 001B, HUM 002A and HUM 002B (24) or ENGL 001A and ENGL 001B (6)

Support for the Major 0-10
One year of college level foreign language or equivalent related to chosen emphasis

Requirements in the Major 43

Required Core Courses 10
HUM 085, HUM 101, HUM 160 and HUM 190

Comparative Courses 6
Choose two from the following: AMS 129, AMS 159, CA 173, HUM 119A, RELS 124, RELS 130, RELS 131

European Studies Required Courses 15
HUM 119A, HUM 119B, HUM 120A, HUM 120B and HUM 128

Major Electives 12
One course from each of the following areas:</cstyle:>
Values and Ideas: HIST 124, HIST 142, PHIL 106, PHIL 107, PHIL 108, RELS 151, RELS 153
The Arts: ARTH 185, ARTH 185A, ARTH 185B, ARTH 186A, ARTH 186B, ARTH 187A, ARTH 187B, ARTH 187C, ARTH 188A, ARTH 188B, ARTH 189A, ARTH 189B, ARTH 190A, CA 172, MUSC 110, MUSC 111, TA 120, TA 121, TA 127
Literature: ENGL 118, ENGL 121, ENGL 125, ENGL 144, ENGL 153A, ENGL 153B, FREN 120A, FREN 120B, FREN 140A, FREN 140B, GERM 140A, GERM 140B, ITAL 101A, ITAL 101B, ITAL 102, SPAN 120A, SPAN 120B, SPAN 140A, SPAN 140B
Politics and Society: ENGL 182, HIST 115, HIST 116, HIST 117, HIST 121A, HIST 121B, HIST 122, HIST 143, HIST 144, POLS 160A, POLS 160B

Electives and/or Minor 20-48

Total Units Required 120

BA - Humanities, Concentration in Liberal Arts

Semester Units

General Education Requirements 18
Of the 51 units required by the university, 3-33 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 0-24
AMS 001A and AMS 001B (12) or HUM 001A and HUM 001B (12) and HUM 002A, HUM 002B recommended (12)

Support for the Major 0-10
One year of college level foreign language or equivalent related to chosen emphasis

Requirements in the Major 43

Required Core Courses 10
HUM 085, HUM 101, HUM 160 and HUM 190

Comparative Courses 12
Choose four from the following: AMS 129, AMS 159, CA 173, HUM 119A, HUM 128, RELS 124, RELS 130, RELS 131

European Studies Required Courses 15
HUM 119A, HUM 119B, HUM 120A, HUM 120B and HUM 128

Major Electives 21

Seven courses from the following, at least two from each area:</cstyle:>

History, Values and Ideas: AMS 169, GEOG 112, HIST 155, HUM 114, HUM 119A, HUM 119B, HUM 120A, HUM 120B, RELS 101, RELS 119, RELS 122, RELS 137, RELS 142, RELS 143, RELS 144, RELS 145, RELS 151, RELS 153, RELS 155, RELS 156, RELS 162, RELS 191, PHIL 104, PHIL 108, PHIL 112, PHIL 119, PHIL 122

Arts and Popular Culture: AFAM 102, AFAM 155, AFAM 161, AMS 179, ARTH 182A, CA 172, MUSC 111, MUSC 117, MUSC 120, PHIL 106, RELS 121, RELS 134, TA 120, TA 127

Literature: CLIT 121, CLIT 122, ENGL 101, ENGL 123A, ENGL 123B, ENGL 123C, ENGL 123D, ENGL 125, ENGL 148, ENGL 149, ENGL 150, ENGL 151, ENGL 161, ENGL 162, ENGL 165, ENGL 168, ENGL 169, PHIL 107

Electives and/or Minor 17-33

Total Units Required 120

BA - Humanities, Concentration in Middle East Studies

Semester Units

General Education Requirements 45-48
Of the 51 units required by the university, 3-6 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 3
MDES 145 (or lower division equivalent)

Support for the Major 0-10
One year of college level foreign language or equivalent related to chosen emphasis

Requirements in the Major 40

Required Core Courses 10
HUM 085, HUM 101, HUM 160 and HUM 190

Comparative Courses 12
Choose four from the following: AMS 129, AMS 159, CA 173, HUM 119A, HUM 128, RELS 124, RELS 130, RELS 131

Major Electives 18

Two courses from each of the following areas:</cstyle:>

Humanities: ENGL 122, RELS 070A, RELS 090, RELS 108, RELS 112, RELS 153, RELS 157

The Arts: ARTH 152, ARTH 183A, ARTH 183B, ARTH 183C, MUSC 148C

Social Sciences: HIST 106, HIST 115, HIST 118, HIST 154, POLS 144, RELS 156, WOMS 189

Electives and/or Minor 17-30

Total Units Required 120

BA - Humanities, Concentration in Religious Studies

Semester Units

General Education Requirements 39-48
Of the 51 units required by the university, 3-12 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 3-6
RELS 070A and RELS 070B or a world religions course

Support for the Major 0-10
One year of college level foreign language or equivalent related to chosen emphasis

Requirements in the Major 40

Required Core Courses 10
HUM 085, HUM 101, HUM 160 and HUM 190

Comparative Courses 12
Choose four from the following: AMS 129, AMS 159, CA 173, HUM 119A, HUM 128, RELS 124, RELS 130, RELS 131

Major Electives 18

Two courses from each of the following areas:</cstyle:>

Traditions: RELS 142, RELS 143, RELS 144, RELS 145, RELS 151, RELS 153, RELS 155, RELS 156, RELS 157

Thoughts, Texts and Images: RELS 090, RELS 104, RELS 108, RELS 109, RELS 112, RELS 134, RELS 152, RELS 161, RELS 186A, RELS 186B, ENGL 116

Religions and Cultures: RELS 099, RELS 111, RELS 114, RELS 119, RELS 121, RELS 122, RELS 123, RELS 137, RELS 148, RELS 162, RELS 191, AFAM 134, HIST 119, HIST 121A, HIST 121B, HIST 122, HIST 154

Electives and/or Minor 14-30

Total Units Required 120

BA - Liberal Studies, Concentration in Cross-Cultural Studies in Mexican and American Education

Cross-Cultural Studies in Mexican and American Education (CCSE) is an interdisciplinary major. This concentration provides future education professionals and scholars with a multi-disciplinary and cross-cultural program of study in education and society. The concentration is designed to facilitate students' understanding of the impact of cultural, ethnic, linguistic, and economic backgrounds on schooling, both in Mexican and American contexts. It is designed to help students experience and understand a foreign culture, and to acquire the self-confidence, independence, and leadership qualities that result from studying abroad through the LA META Program in Querétaro, Mexico. Students majoring in CCSE may wish to work with youth in a variety of ways, including as a bilingual teacher.

The BA, Liberal Studies, Concentration in Cross-Cultural Studies in Mexican and American Education, is not accepting applications due to a US State Dept travel warning for Mexico, which prevents students from completing a year in the CSU IP study abroad program in Mexico (a program requirement).

Semester Units

General Education Requirements 18
Of the 51 units required by the university, 33 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 20
SPAN 001A, SPAN 001B, SPAN 025A (*) and SPAN 025B (*)

Requirements for the Major 73

Humanities 13
HUM 085, HUM 100W, HUM 185, HUM 190 and AMS 169

Social Science 9
SOCI 001, MAS 010A and MAS 010B

Science and Mathematics 12
BIOL 021, CHEM 030A, GEOL 102 and MATH 012

Human Development and Foreign Language 6
CHAD 067 and SPAN 102B

Depth of Study 6
Complete six units from: MAS 185, SOCS 177, LING 108, LING 129

Study Abroad - La META (**) 27
Complete 27 units of Study Abroad Courses in consultation with the Liberal Studies Advisor, including 2 semesters of Spanish

Electives 7

Total Units Required 120

*Or SPAN 020A, SPAN 020B for Spanish speakers; or required results on the Spanish Proficiency Test at the Foreign Language Department.

**Prerequisites for a year abroad include a cumulative GPA of 2.75 for all higher education work and upper division standing by the end of the spring term prior to departure.

BA - Liberal Studies, Preparation for Teaching

This major is designed for students interested in teaching in elementary school or middle school. The following course work satisfies San José State University's requirements for a BA in Liberal Studies. In addition, this program was approved by the California Commission on Teacher Credentialing (CCTC) as subject matter preparation for diversified subject matter preparation.

Maintaining 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 index) for information on application and admission to credential programs.

Semester Units

General Education Requirements 6-12
Of the 51 units required by the university, 39-45 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Requirements in the Major 91-100

Reading, Language and Literature 18
ENGL 001A, ENGL 001B and ENGL 112A (9); ENGL 103 or LING 107 (3); LING 108 and EDEL 108E (6) or CHAD 150 and CHAD 151 (6)

History and Social Science 15-21
AMS 001A and AMS 001B, AAS 033A and AAS 033B, HIST 015A and HIST 015B or MAS 010A and MAS 010B (6-12); GEOG 137, GEOG 138 and GEOG 139 (9)

Mathematics 9
MATH 012, MATH 105 and MATH 106

Science 12
BIOL 021 (3); CHEM 030A or CHEM 035 (3); GEOL 103 (3); SCI 110 or ENVS 158 (3)

Visual and Performing Arts 9
CA 177 (3); Complete six units from: ART 039, ART 138, DANC 148, MUSC 010B, MUSC 185A, TA 167 (6)

Physical Education and Health 3-6
KIN 177 and EDTE 190 (6) or CHAD 149 (3)

Human Development 3
CHAD 060 or CHAD 067

Introduction to Liberal Studies 1
HUM 085

Depth of Study 12
Choose One:</cstyle:>

Western Cultures 12
Complete four courses from: HUM 119A, HUM 119B, HUM 120A, HUM 120B, HUM 128

American Culture 12
AMS 169, AMS 179, RELS 162 and RELS 191

World Cultures 12
HUM 114, RELS 131, MDES 145 and AMS 159

Advanced Writing 3
HUM 100W

Field Study 3
HUM 185

Capstone Course 3
HUM 190

Electives 3-21
One year of second language or ASL recommended. If proficient in a foreign language, EDTE 190 and EDSE 192A.

Total Units Required 120

Minor - American Studies

This interdisciplinary program offers students the opportunity to study American culture and society. In addition to the focus on a better understanding of American culture, there is 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 (for requirements in the minor in American Studies, see index).

Semester Units

Plan A..... 21
AMS 001A, AMS 001B, AMS 169, AMS 179 and AMS 190

Plan B 18
AMS 159, AMS 160, AMS 169, AMS 179, AMS 190 and HUM 101

Total Units Required 18-21

Minor - Asian Studies

The Asian Studies minor will acquaint 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 (for requirements in the minor in Asian Studies see index).

Semester Units

Group A 6-9

Select 6-9 units from at least two of the following.</cstyle:>
Complete six to nine units from: ARTH 070C, ARTH 193B, ARTH 194A, ARTH 194B, ARTH 195, CHIN 102, CHIN 140, HUM 114, JPN 102, LING 122, MUSC 019, MUSC 148B, MUSC 148C, PHIL 104, RELS 070B, RELS 142, RELS 143, RELS 144

Group B 6-9

Select 6-9 units from at least two of the following.</cstyle:>
Complete six to nine units from: ANTH 115, ANTH 177, BUS 133B, GEOG 160, HIST 107, HIST 109A, HIST 109B, HIST 110B, HIST 110A, POLS 145

Group C 3-6
Three to six units in a foreign language related to one's chosen area, such as Chinese, Japanese, Punjabi, or Vietnamese.

Total Units Required 18

Minor - Humanities

Semester Units

Plan A..... 33
Completion of the Humanities Program (HUM 001A, HUM 001B, HUM 002A, HUM 002B) (24); HUM 190 (in the senior year) (3); HUM 119A, HUM 119B, HUM 120A, HUM 120B, HUM 128 or HUM 160 (3); Any upper division humanities course (3)

Plan B 18
Twelve units of upper-division Humanities courses, as approved by the advisor (12); HUM 101 and HUM 190 (6)

Total Units Required 18-33

Students who have not completed the lower division Humanities Honors Program may, with the approval of their major department, complete a liberal arts humanities minor by taking fifteen (15) units of upper-division humanities courses, as approved by the advisor, plus HUM 190.

Minor - Middle East Studies

This interdisciplinary minor 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, foreign languages, history, humanities, political science, sociology and religious studies (for requirements in the minor in Middle East Studies, see index).

Semester Units

Required Course..... 3
MDES 145

Traditions Courses 6
Complete two courses from: MDES 070A, MDES 153, MDES 156, MDES 157, MDES 189

Electives 6
Art History: MDES 183A, MDES 183B or MDES 183C
History: MDES 106, MDES 115, MDES 118 or MDES 154
Religious Studies: MDES 090, MDES 108 or MDES 112
Political Science: MDES 144

Supplemental Electives..... 3
ANTH 011, ANTH 146, BUS 133A, BUS 146, BUS 161A, COMM 174, GEOG 101, MDES 180, MDES 184, MUSC 019, POLS 004, POLS 154, SOCI 162 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

Minor - Religious Studies

Semester Units

RELS 101, plus 12 additional units of which 6 must be upper division and 9 in RELS courses. One course chosen from the following may also be included: AFAM 137, ENGL 116, HIST 115, HIST 116, HIST 117, HIST 121A, HIST 121B, HIST 122, HIST 154. (15)

Total Units Required 15

Industrial and Systems Engineering

College of Engineering

Engineering Building 485
408-924-3301 (Voice)
408-924-4040 (Fax)
industrialsystems-dept@sjsu.edu
www.engr.sjsu.edu/ise/

Human Factors/Ergonomics

Professors

Louis E. Freund, Director
Kevin Jordan
Emily H. Wughalter

Associate Professors

John McClusky

Assistant Professors

James Kao

Industrial and Systems Engineering

Professors

Yasser M. Dessouky, Chair
Louis E. Freund
Niranjani Patel
H.S. Jacob Tsao

Curricula

BS, Industrial and Systems Engineering
Minor, Engineering Management
Minor, Statistical Quality Engineering
Certificate, Six Sigma Green Belt
Certificate, Six Sigma Black Belt
MS, Industrial and Systems Engineering
MS, Human Factors/Ergonomics

Introduction

What Do ISEs DO?

Industrial and Systems Engineers (ISEs) figure out how to do things better. They engineer processes and systems that improve quality and productivity. ISEs make significant contributions to their employers by saving money while making the workplace better for fellow workers. In addition to manufacturing, industrial engineers apply their skills in a variety of settings such as hospitals, airlines, utilities, and government agencies.

The ISE Program at San José State University

The BS - 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 ISE's focus is on productivity improvement, with concern for the human aspects of work as well as with finding the right combination of resources to ensure that the organization performs at its best. Utilizing the latest computer-based analytical and modeling technologies, ISE bridges the gap between management and operations, applying organizational development, continuous improvement, Total Quality Management, ergonomics and production systems expertise. The goal of ISE is to assure that the organization's systems are efficient, productive, safe and will not lead to cumulative injury, and that they incorporate the right tools and equipment. An industrial and systems engineer may be employed in almost any type of industry, business or institution, from retail establishments to manufacturing plants to government agencies to hospitals. The program prepares students to enter the profession immediately or to go on to graduate school. The BS ISE program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

Mission Statement

The Mission of the Industrial and Systems Engineering program is to serve society, with emphasis on the manufacturing and service sectors by:

- Providing undergraduate and graduate industrial and systems engineering education that prepares students to effectively apply engineering knowledge to the evaluation, design, and operation of complex industrial, service, and governmental systems comprised of people, equipment, and supplies through the application of modeling, measurement, and economic methods.
- Contributing to the enrichment of the profession and to the development of knowledge through faculty leadership, scholarship and professional practice.
- Meeting the needs of working professionals for continuing education in the fields of operations research advanced statistical methods, ergonomics and human factors, production planning and control and related topics.

Educational Objectives

The objectives of the BSISE program are to educate Industrial & Systems Engineers who will be able to:

- Function effectively as an ISE professional in any industry, government, or service organization designing, improving, and implementing efficient business processes.
- Use methodologies and computational skills to identify, formulate, and develop solutions for problems normally encountered in their organizations.
- Collect, analyze, and interpret data efficiently and effectively to solve systems analysis and engineering problems.
- Evaluate the impact of their proposed solutions to engineering problems in the broader context of the organization or society.
- Effectively communicate using written, oral and electronic media to articulate technical problems and their proposed solutions.
- Recognize the need for life-long learning and growth within their chosen profession and to be familiar with the strategies they may employ to accomplish this.

BS - Industrial and Systems Engineering

At least two approved technical electives must be engineering courses and all technical electives must be completed with a grade of "C" or better.

All College of Engineering undergraduate majors are required to maintain a Major GPA of 2.0 or above. Major GPA includes all courses required for the major, including math, science and engineering.

	Semester Units
General Education Requirements	30
Of the 51 units required by the university, 21 may be satisfied by specified major and support requirements. Consult major advisor for details.	
American Institutions	(6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.	
Physical Education	2
Preparation for the Major	26
MATH 030, MATH 031, MATH 032 and MATH 123 (13); PHYS 070 and PHYS 071 (8); CHEM 001A (5)	
Required for the Major	72
Engineering Common Core	14
CMPE 030 or CMPE 046 (3) and ENGR 010, ME 020, EE 098 and MATE 025 (11)	
Required Courses in Engineering and Science	49
ISE 102, ISE 105, ISE 115, ISE 120, ISE 130, ISE 131, ISE 135, ISE 140, ISE 142, ISE 151, ISE 155, ISE 167, ISE 170, ISE 195A, ISE 195B, ENGR 100W and CMPE 131	
Approved Technical Electives	9
Selected from the approved departmental list in consultation with the student's advisor	
Total Units Required	130

Note: PHYS 050, PHYS 051 and PHYS 052 may be taken in place of PHYS 070 and PHYS 071.

Minor - Engineering Management

	Semester Units
Required Courses	6
ISE 102 and ISE 151	
Additional Requirements	6
Choose 2 of three:</cstyle:>	
ISE 105, ISE 142, ISE 155	
Total Units Required	12

Minor - Statistical Quality Engineering

A grade of "C-" or better is required for each course counted toward the minor.

	Semester Units
Required Courses	9
ISE 130, ISE 162 or MATH 161A ((3)) (3); ISE 131 and ISE 135 (6)	
Additional Requirements	3
At least one of these courses is required.</cstyle:>	
ISE 102 or ISE 151	
Total Units Required	12

Six Sigma Certificates

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 is available to ISE graduate students and local professionals

Six Sigma Green Belt Certificate

	Semester Units
ISE 250 (3)	
Total Units Required	3

ISE 250 must be completed with a grade of "B" or better.

Six Sigma Black Belt Certificate

	Semester Units
ISE 202, ISE 235, ISE 250 and ISE 251 (12)	
Total Units Required	12

All courses must be successfully completed with a grade of "B" or better, and students must pass an exit exam.

MS - Industrial and Systems Engineering

Requirements for Admission to 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 at another university with an accredited curriculum, with a grade point average of 3.0 ("B") or better in the upper division work (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 bachelor's 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 Admission 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 demonstrate competency in written English as a condition for advancement to candidacy. Please refer to the SJSU catalog section titled "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape. In addition, the applicant must demonstrate aptitude for advanced professional work in industrial engineering, as measured by instructor appraisals, analysis of previous academic work or other appropriate means. Admission to candidacy and approval of programs will be handled by a faculty committee and the student's advisor.

Completing Requirements for the MS - Industrial and Systems Engineering

Students who have been admitted 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 at least two core courses, four courses in a specialty area, one elective and a thesis or comprehensive-exam/project. Five specialty areas are offered: Systems and Information Modeling, Production and Quality Assurance, Human Factors, Service Systems Engineering and Supply Chain Engineering. The minimum requirements are:

	Semester Units
Core ISE Courses ISE 200, ISE 230 or ISE 235	6-9
Courses in an ISE Specialty Area Courses from (a) systems and information modeling, (b) production and quality assurance, (c) human factors, (d) supply chain engineering, or (e) service systems engineering.	12-18
Electives Courses selected from other ISE specialty areas or approved by the graduate advisor.	6
Thesis or Comprehensive Exam/Project	1-3
Total Units Required	30-31

MS - Human Factor/Ergonomics

The ISE Department also administers the MS degree program in Human Factors/Ergonomics. This program is a cooperative program involving the Departments of Industrial and Systems Engineering, Psychology, Industrial Design and Kinesiology. Additional information can be found at www.engr.sjsu.edu/hfe.

Human Factors/Ergonomics

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 bi-weekly seminar is required of all students each semester. The program culminates in a thesis or creative project.

Requirements for Admission to Classified Standing

Applicants for classified standing must have completed a BS degree in Psychology, Industrial Engineering, Occupational Therapy, Industrial Design, Kinesiology, 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 and the GRE exam with a minimum combined score of 1000 (verbal + quantitative) are preferred. Applicants for classified standing will also be expected to have completed an upper division course in statistics, including an introduction to analysis of variance.

Those who do not meet the requirements for classified status may be admitted with specific conditions as conditionally classified; any conditions stated upon admission in this status must be fulfilled before the student can be admitted 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).

See the program web site www.engr.sjsu.edu/hfe or contact the program Director for details regarding application deadlines.

Requirements for Admission 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 demonstrate competency in written English as a condition for advancement to candidacy. Please refer to the SJSU catalog section titled *Competency in Written English* for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape. 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. Admission to candidacy and approval of programs will be handled by a faculty committee and the student's program advisor.

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:

	Semester Units
Core Courses ISE 210; ISE 212, ISE 135 or ISE 202; ISE 290	11
Psychology PSYC 273	3
Kinesiology KIN 266	3
Approved Electives	9
Thesis or Creative Project ISE 298 or ISE 299	4
Total Units Required	30

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 based on the student's current and long term interests and resource requirements.

Course descriptions can be found under the listings for the respective departments elsewhere in this catalog. Electives may be selected from a wide range of graduate courses offered on the SJSU campus in industrial engineering, psychology, kinesiology and other departments. 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 web site for further details.

Interdisciplinary Social Sciences

College of Social Sciences

Dudley Moorhead Hall 239A
408-924-5740

Professors

Maria Luisa Alaniz
Hien Duc Do, Coordinator, Asian American Studies
Shahin Gerami, Coordinator, Women's Studies
Alexander Yamato, Chair

Associate Professors

Henry J. Gutierrez

Assistant Professors

Tanya Bakhru
Estella Habal

Curricula

BA, Social Science
BA, Social Science, Preparation for Teaching (Single Subject)
BA, Social Science, Preparation for Teaching (Multiple Subjects)
Minor, Asian American Studies
Minor, Social Science
Minor, Women's Studies

Introduction

The Interdisciplinary Social Sciences Department offers majors and minors which draw on social scientific methods of inquiry, connected by interdisciplinary courses that investigate subjects from a multiplicity of perspectives, rather than focusing on a single discipline. The department includes the Asian American Studies Program, the Social Science Program and the Women's Studies Program.

The undergraduate major draws on the strengths of the three programs and offers a broad, liberal arts education with a focus in the social sciences. Two options within the BA - Social Science prepare future teachers for entrance into elementary (multiple subjects) or secondary (single subject) teaching credential programs in the College of Education by satisfying the requirements of the California Commission on Teacher Credentialing.

A third option, the topical social sciences major, enables students to specialize in interdisciplinary investigation of particular topics. Students take courses from across the College of Social Sciences. Approved topics include: Asian American Studies, Comparative Studies in Race/Ethnicity, Class and Gender, Public Service and Social Change, and Women's Studies. Special topics may also be arranged. Interested students should consult with the department for handouts specifying required and recommended courses. Students should consult the department for new topical areas under development.

The Asian American Studies and Women's Studies Programs analyze the social, economic, political and historical dimensions of ethnicity and gender, with emphases on Asian Americans, cultural and ethnic diversity and women. Each of the three programs offers a minor.

Asian American Studies Program

Coordinator: Professor Do

The purpose of the Asian American Studies Program is to shed light on the forces and processes which have shaped American society. The program focuses on the perspectives of Asian Americans and their contributions in the development of the United States. It seeks to account for the similarities and differences in their participation in, and responses to, the social and cultural processes that have given form to the United States in a global context. To facilitate the study of this complex social phenomena, courses in the program are interdisciplinary, with emphases upon the social sciences.

A major concern of the program is the quality of education that is made available to the university community. In recognition of the fact that American society is multiculturally diverse and that social inquiry in the field of ethnic experience has been neglected, the program engages in the dissemination of knowledge, the expansion of knowledge through scholarly research, and the exchange of ideas between the community at large and the campus. This communication with the community has been spawned by the program's unique interdisciplinary formula for teaching and research. As part of the program's research and teaching activities, students and faculty have undertaken several projects in adjacent communities in which they join with nonacademic personnel working within their own institutions.

A minor in Asian American studies is selected by students planning careers requiring knowledge and awareness of the complex nature of American culture and society. Students have found the program to be useful preparation for careers in community service at many levels - local, state and national. The program offers knowledge and training to be effective in professional work in the Asian American community, in such careers as teaching, social work, urban planning, law, health, administration, business, communication, and human development.

Students considering a minor in Asian American studies should consult with the program coordinator.

Social Science Program

Coordinator: Professor Yamato

The Social Science Program offers interdisciplinary courses which cross the boundaries of disciplinary method. These courses especially focus on a social science analysis of education, interdisciplinary study of the foci of the social sciences and the unique perspectives and contributions of scholars who are people of color and women.

Specified course work prepares students for elementary, middle and secondary school teaching credential programs. In addition, courses support social science topical majors.

Women's Studies Program

Coordinator: Professor Gerami

Women's Studies is a comprehensive interdisciplinary program concentrating on women and gender relations. The Women's Studies Program at SJSU has historically focused on gender, race, and class and is currently developing a concentration on gender, health, and sexuality from a transnational perspective.

The learning goals of the Women's Studies Program include the cultivation of intellectual growth, dialogue, coalition building, appreciation of diversity, and contribution to social change based on feminist frameworks. A Women's Studies minor complements any major and is essential to understanding the dynamics of modern work culture.

Students may select a 15-unit minor or a 30-unit emphasis in women's studies within the BA - Social Science. In addition to the courses offered by the Women's Studies Program, a wide variety of courses on women and gender is offered by other departments. A complete listing of courses is available each semester in the Women's Studies Program class list handout.

Interested students should consult with a Women's Studies Program faculty member for advising and approval of the program.

BA - Social Science

Students may choose an interdisciplinary BA - Social Science with a topical emphasis.

Semester Units

General Education Requirements 42
Of the 51 units required by the university, 9 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Requirements in the Major 45

Lower Division 15
Complete five of: ANTH 011; ECON 001A or ECON 001B; GEOG 010; HIST 010A or HIST 010B; POLS 002; PSYC 001; SOCI 001

Upper Division 30

Core Social Science Courses 9
SOCS 177, SOCS 193 and SOCS 195

Topical Emphasis 21
Select one of the following emphases.</cstyle:>
Asian American Studies; Comparative Studies in Race/Ethnicity, Class and Gender; Public Service and Societal Change and Women's Studies. See department for approved clusters of electives.

Electives 31

Total Units Required 120

BA - Social Science, Preparation for Teaching (Single Subject)

This major is designed for students interested in teaching history, political science (government), economics, or social science in high school or middle school. The following course work satisfies San José State University's requirements for a BA in Social Science. In addition, this program is approved by the California Commission on Teacher Credentialing (CCTC) as subject matter preparation for a single subject credential in social science.

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 index) for information on application and admission to credential programs.

The San José State University College of Social Science Subject Matter Preparation Program is a 45 unit major.

Students are required to take 6 units of lower division World History and 6 units of lower division United States History and Government. These courses provide our majors with a broad foundation in the history and political science content they will need to teach Social Studies in the middle and high school. Upper division history courses consist of 3 units of World History, 6 of U.S. History and 3 units of California History. In addition, students take three courses (9 units) that are especially designed for teacher preparation majors in the fields of Political Science, Geography and Economics. An additional course in Geography provides depth in global topics.

Three Social Science courses (SOCS 177, 185, 195) emphasize the social science of education theory, exemplary studies in the field of education, diversity, practice in using technology in the classroom, modeling of varied teaching experiences, field work in the public schools and formative and summative assessment. Collectively these courses compliment the core by providing the student with the opportunity to read and discuss issues relating to creating and maintaining an effective environment for student learning, engaging and supporting all students in learning, organizing subject matter for student learning and the role of teachers as leaders and advocates beyond the classroom.

Semester Units

General Education Requirements 39-42
Of the 51 units required by the university, 9-12 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Requirements in the Major 51

Lower Division 12
HIST 001A and HIST 001B (6); select one sequence of U.S. History and Government courses from the following: HIST 015A and HIST 015B; AFAM 002A and AFAM 002B; MAS 010A and MAS 010B, or AAS 033A and AAS 033B (6)

Upper Division 39
SOCS 177, SOCS 195, GEOG 101, HIST 189A and HIST 189B (15); HIST 155, HIST 186 and HIST 187 (9); ECON 109, GEOG 123, MAS 185, POLS 101 and RELS 191 (15)

Electives 25-28

Total Units Required 120

BA - Social Science, Preparation for Teaching (Multiple Subjects)

This major is designed for students interested in teaching in elementary school or middle school. The following course work satisfies San José State University's requirements for a BA in Social Science. In addition, this program is approved by the California Commission on Teacher Credentialing (CCTC) as subject matter preparation for diversified subject matter preparation.

Maintaining a minimum grade of 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 index) for information on application and admission to credential programs.

Semester Units

General Education Requirements 6
Of the 51 units required by the university, 45 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Requirements in the Major 36

Lower Division 6
AAS 033A and AAS 033B (6); HIST 015A and HIST 015B (6)

Upper Division 30
GEOG 137, GEOG 138, GEOG 139, SOCI 162, SOCS 177, SOCS 195, POLS 102, GEOG 112, ANTH 115 and ECON 109

Support Requirements for Diversified Major 60-66

Language & Literature 21
ENGL 001A, ENGL 001B and ENGL 112A (9); ENGL 103 or LING 107 (3); any GE area A3 course (3); LING 108 and EDEL 108E (6) or CHAD 150 and CHAD 151 (6)

Mathematics 9
MATH 012, MATH 105 and MATH 106

Science 12
CHEM 035, BIOL 021, GEOL 103 and SCI 110

Visual and Performing Arts 9
CA 177 (3); Complete six units from: ART 039, ART 138, DANC 148, MUSC 010B, MUSC 185A, TA 131 (6)

Physical Education and Health 3-6
KIN 177 and EDTE 190 (6) or CHAD 149 (3)

Human Development 3-6
PSYC 082 and CHAD 067 (6) or CHAD 060 (3)

Other Preparation for the Major and Supporting Courses 3
SOCS 100W

Electives 10-16
Foreign language and technology requirements for teaching credential strongly recommended (see Credential Information Services).

Total Units Required 120

Minor - Asian American Studies

Semester Units

Required Courses 9
AAS 033A, AAS 033B and AAS 175

Additional Course 3
Complete one course from: AAS 185, SOCS 193, WOMS 160

Elective 3
Complete one course from: AAS 125, AAS 160, AAS 186, AAS 187

Total Units Required 15

Minor - Social Science

Semester Units

Required Courses 9
SOCS 177 and SOCS 195 (6); Complete one course from: AAS 185, SOCS 193, WOMS 160 (3)

Elective Courses 9
Three courses, two of which may be lower division, from Asian-American studies, anthropology, economics, geography, history, political science, psychology, sociology, women's studies (no more than two courses may be from any one subject area listed above).

Total Units Required 18

Minor - Women's Studies

Semester Units

Required Courses 12
WOMS 010, WOMS 101 and WOMS 102 (9); Complete three units from: AAS 185, WOMS 160, WOMS 193 (3)

Electives 3
Take 3 units from the following if not taken from the list above.</cstyle:>
WOMS 020, WOMS 144, WOMS 160, WOMS 169, WOMS 180, WOMS 189, WOMS 190, WOMS 193, AFAM 156, AFAM 166, AAS 160, MAS 160

Total Units Required 15

Interdisciplinary Studies

Graduate Studies and Research

Pamela C. Stacks, Associate Vice President

David Bruck, Interim Associate Dean

Jerry Flanzer, Associate Dean for Research

Administration Building, Room 223B
408-924-2427
www.sjsu.edu/gape/forms

Curricula

MA, Interdisciplinary Studies
MS, Interdisciplinary Studies

Introduction

The interdisciplinary studies major for either an MA or MS degree provides an alternative for individuals whose desired study plans do not fit the degree offerings of any single existing graduate degree program on campus.

An interdisciplinary studies major consists of an individualized, interdisciplinary program of 30 units, half of which must be at the graduate level. The program may be either Plan A (thesis) or Plan C (creative project). All candidates for this major must register for departmental thesis units in (299). The candidate must comply with all applicable California Administrative Code requirements as well as university requirements outlined in this catalog for admission to the graduate program, admission to candidacy and award of the degree. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Studies and Research website at www.sjsu.edu/gradstudies.

To be eligible for an interdisciplinary studies major, the student must have a minimum GPA of 3.0 ("B") in the last 60 semester units of post-secondary academic work for admission to the Graduate Division. The student must also be eligible for classified admission to at least one of the departments in which he or she expects to take substantial course work for the interdisciplinary studies major.

Graduate students at San José State University who wish to undertake an interdisciplinary studies major should contact the Graduate Studies office to obtain a proposal for an interdisciplinary studies major and initial approval by the Associate Vice President of Graduate Studies and Research. A guide for interdisciplinary majors is located at www.sjsu.edu/gradstudies/forms.

After the proposal receives initial approval, the student forms a special advisory committee comprised of at least three full-time faculty members representing the student's major fields of interest. The advisory committee, chaired by one member, must approve the proposed program before the Associate Vice President of Graduate Studies and Research gives final approval.

Jewish Studies Program

College of Social Sciences

Business Tower (BT) 563
408-924-5547 (Voice)
408-924-5531 (Fax)
www.sjsu.edu/depts/jwss/

Professors

Mira Z. Amiras
Constantine Danopoulos
David Mesher
Jonathan P. Roth

Other Faculty

Victoria Harrison, Director
Rina Katzen

Curricula

Minor, Jewish Studies

Introduction

The interdepartmental minor in Jewish Studies consists of courses taken from the Departments of English, Foreign Languages, History, Political Science, Art History and the Religious Studies Program. The purpose of the Jewish Studies minor is to acquaint the student with the history, culture and religion of the Jewish people as seen through the eyes of modern academic disciplines.

Minor - Jewish Studies

	Semester Units
Required Courses	12
JWSS 010A, JWSS 010B, JWSS 108 or JWSS 153 (6); HIST 106 or JWSS 154 (6)	
Elective Courses	6
Complete 6 units from JWSS courses.	
Total Units Required	18

Journalism and Mass Communications

College of Applied Sciences and Arts

Dwight Bentel Hall 105
408-924-3240 (Voice)
408-924-3229 (Fax)
www.jmc.sjsu.edu

Professors

Cecilia Baldwin
William G. Briggs
Scott Fosdick
Diana Stover
William A. Tillinghast

Associate Professors

Mathew Cabot
Duane Michael Cheers
Richard Craig
Timothy Hendrick
Kathleen Martinelli
Robert Rucker, Director

Assistant Professors

Diane Guerrazzi
Kim Komenich

Curricula

BS, Advertising
BS, Journalism
BS, Public Relations
Minor, Advertising
Minor, Journalism
Minor, News Media Design
Minor, Public Relations
MS, Mass Communications

Introduction

"New electronic interdependence recreates the world in the image of a global village." When Marshall McLuhan said that in 1967, little did he know how much the media would be affected by information technology years later. Recognizing the importance of communicating in a multimedia environment on a global scale, the School of Journalism and Mass Communications maximizes students' communication skills in all forms of the mass media using the latest electronic technology, including computer notebooks and a wireless network. Students can learn how to: put out a daily newspaper, write features for a student magazine, report on-air for television and radio, create and execute advertising and public relations campaigns for a variety of organizations in a joint advertising/public relations student agency, research how the media reaches target audiences and work as a director of development for nonprofit organizations in the arts and social services.

A wide selection of student clubs function to introduce students to opportunities, jobs and trends in mass communication and corporate communication fields. The Public Relations Student Society of America (PRSSA), the Radio, Television News Directors Association (RTNDA), the National Press Photographers Association (NPPA), the Society of Professional Journalists (SPJ) and the Ad Club are student chapters affiliated with national professional advertising, public relations and journalism associations. Equally active are clubs such as Mu Alpha Gamma (magazine journalism). Other student organizations, such as Kappa Tau Alpha (national student honor society), recognize outstanding scholarship.

The location of SJSU in the heart of Silicon Valley provides advantages for student internships. The School has hundreds of active internship agreements with newspapers, broadcast stations, magazines, advertising and public relations agencies and communication departments in major corporations.

The School of Journalism and Mass Communications offers BS degrees in Journalism, Advertising, and Public Relations and an M.S. in Mass Communications. Graduates of the School of Journalism and Mass Communications are equipped with an education that enhances advancement not only in media-related fields but in any field of endeavor. Students learn how to gather, synthesize and disseminate information. The Internet, library and original research, interview techniques and observation are emphasized in the information-gathering process. Critical thinking and logic skills come into play along with the ability to write and edit messages for distribution by various means, including newspapers, magazines, radio, television, billboards, news releases and World Wide Web. It is policy of the School of Journalism & Mass Communications that all students have a laptop computer with software appropriate for use in their school classes. A detailed and updated list of technology recommendations is available in the school office, DBH 105, and on the journalism school website.

The school counts among its graduates thousands of successful people who have achieved at all levels. They include publishers, editors, news directors, writers, Pulitzer Prize winners, vice presidents of corporate communications at major corporations, and counselor to the president of the United States.

With a degree from the school, career possibilities include:

- Reporter
- Copy Editor
- Editorial Writer
- Columnist
- Magazine Writer
- Speech Writer
- Foreign Correspondent
- Public Affairs Director
- Legislative Assistant
- Managing Editor
- Publisher
- Marketing Communications Director
- Public Information Specialist
- Technical Writer/Editor
- Graphic Designer
- Online Content Provider
- Photojournalist
- Advertising Account Executive
- Advertising Copywriter
- Public Relations Director
- Advertising Layout/Design/Production
- Professional Fundraiser
- Development Director
- Corporate Communication Vice President
- Broadcast News Anchor/Video Journalist/Reporter
- Broadcast News Director
- Web Writer

Faculty represent a blend of experience as journalists, photographers, freelance writers, authors, graphic designers, advertising and public relations executives. We offer small classes and encourage faculty and student interaction. Faculty regularly meet with students to advise them about academic as well as career issues. Professionals often appear as guest lecturers and serve on advisory boards.

Advisement

Each student is assigned an academic advisor who guides the student in selection of course work and assists the student in meeting the academic expectations of the school and the university. The student is strongly encouraged to maintain close contact with the assigned faculty advisor. The shared goal is successful completion of the degree requirements within a reasonable amount of time.

Transfer Units/Credits

Community college courses evaluated as equivalent to SJSU courses in the lower division are transferable to undergraduate majors. A total of 15 community college semester units in the advertising, journalism and mass communication fields are transferable to the major.

Four-year college credits in advertising, journalism, public relations and mass communications can also be applied to the school degree requirements. However, 12 units of course work must be earned by taking courses in the major at San José State University (nine units for the minor).

National Accreditation

The School of Journalism and Mass Communications is one of 114 programs that is nationally accredited by the Accrediting Council on Education in Journalism and Mass Communications (ACEJMC). Accredited programs embrace the value of a liberal arts and sciences curriculum as the essential foundation for a professional journalism and mass communications education. National accreditation assures students, parents, journalism and mass communications professionals and the public that our program meets rigorous standards for professional education. For graduation, students seeking degrees in the school must complete 120 semester units, including a minimum of 80 units outside the school. Within the 80 outside units must be 65 units of liberal arts and sciences. Courses offering practical instruction in fields closely related to mass communications may not be applied, regardless of where offered, including technical writing courses in English and internships, activity or independent study courses offered by other departments or schools.

Students in the School of Journalism and Mass Communications have consistently won awards in competitions with students from other universities. Students are encouraged to compete, and faculty advisors offer support.

We are always happy to make an appointment with students or their parents to discuss the program, to provide academic or career counseling or to provide a tour of our facilities. You can reach us by email at: jmcweb.sjsu.edu {mailto:jmcinfo@casa.sjsu.edu} or by sending a letter to the school. Our telephone number is 408-924-3240. Check us out on the web at www.jmcweb.sjsu.edu/index.html.

Honors Program

Majors with a 3.2 GPA overall and a 3.5 GPA in advertising, journalism, or public relations at the end of their junior year (at least 90 units completed of which 30 are in the major) are eligible to apply for the Honors Program in the School of Journalism and Mass Communications. Application must be made to the Director of the School no later than the first semester of the senior year. The School will limit those admitted to the Honors Program each year to no more than 10 percent of the number of its graduates in the previous academic year. Once admitted to the Honors Program, students must maintain at least a 3.2 GPA overall and at least a 3.5 GPA in their major. They must take a graduate-level seminar that has been approved by the graduate coordinator. To receive honors, students, as part of the seminar requirements, must complete and present a seminar paper and must receive a 3.0 or better grade in the course.

BS - Advertising

Semester Units

General Education Requirements 45
Of the 51 units required by the university, 6 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Advertising Core Courses 28
MCOM 072, MCOM 100W, MCOM 101 and MCOM 111 (12); MCOM 070, MCOM 105 or MCOM 106 (3); MCOM 103 or MCOM 104 (3); ADV 091, ADV 129 and MCOM 063 (9); Approved elective in journalism, advertising, public relations or mass communications (1)

Requirements in the Major 36

Choose Management or Creative Track.</cstyle:>

Management Option 36

Preparation for the Major and Support Courses 24
Art elective (3); Literature elective (3); BUS 130 (3); BUS 090 or STAT 095 (3); academic focus (12)

Required Track Courses 12
ADV 126 and ADV 128 (6); Complete two courses from: ADV 116, ADV 121, ADV 122, ADV 123, ADV 124, ADV 125 (6)

Creative Option 36

Preparation for the Major and Support Courses 24
Art elective (3); Literature elective (3); BUS 130 (3); ENGL 071 (3); academic focus (12)

Required Track Courses 12
ADV 124 and ADV 125 (6); Complete two courses from: ADV 116, ADV 121, ADV 122, ADV 123, ADV 126, ADV 128, ADV 130 (6)

Electives 9

Total Units Required 120

*MCOM 199 substitutes for MCOM 111 and ADV 129 by invitation.

BS - Journalism

Semester Units

General Education Requirements 45
Of the 51 units required by the university, 6 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major and Supporting Courses 18
POLS 103 (3); MCOM 063 (3); an additional 12 units in Academic Focus, chosen with approval of school major academic advisor (12)

Requirements in the Major 40

Common Core 19
MCOM 072, MCOM 100W, MCOM 101 and MCOM 111 (12); MCOM 070, MCOM 105 or MCOM 106 (3); MCOM 103 or MCOM 104 (3); MCOM 180 (1)

Emphasis 21

Choose an emphasis in Magazine, Photojournalism, Radio/Television News, or Reporting and Editing (newspaper).</cstyle:>
Consult the departmental academic advisor for approved clusters of electives.

Electives 15

Total Units Required 120

*MCOM 199 substitutes for MCOM 111 and ADV 129 by invitation.

BS - Public Relations

	Semester Units
General Education Requirements Of the 51 units required by the university, 6 may be satisfied by specified major and support requirements. Consult major advisor for details.	45
American Institutions Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.	(6)
Physical Education	2
Preparation for the Major and Supporting Courses BUS 130 and COMM 144F (7); academic focus in an academic department with approval of school academic advisor (12)	19
Requirements in the Major MCOM 072, MCOM 100W, MCOM 101 and MCOM 111 (12); MCOM 070, MCOM 105 or MCOM 106 (3); MCOM 103 or MCOM 104 (3); JOUR 061, PR 099, PR 190, PR 191, PR 192 and PR 199 (18); Approved electives in journalism, advertising, public relations or mass communications (*) (4)	40
Electives	14
Total Units Required	120

*MCOM 199 substitutes for MCOM 111 and PR 199 by invitation.

Minor Programs

Students planning a minor in the school are urged to consult a faculty advisor. Minors may be arranged to meet special needs of students not majoring in the school; the following minors are regularly available.

Minor - Advertising

	Semester Units
ADV 091, ADV 128 and ADV 129 (9) Complete three of: ADV 116, ADV 121, ADV 122, ADV 123, ADV 124, ADV 125, ADV 126 (9)	
Total Units Required	18

Minor - Journalism

	Semester Units
Required Courses MCOM 072 and JOUR 061	6
Approved Departmental Clusters of Electives Please consult the Journalism School Advisor for approved courses in an area of specialization: Photojournalism, Eelctronic Media, Reporting-Editing or Magazine.	12
Total Units Required	18

Minor - News Media Design

	Semester Units
Core Courses MCOM 070, JOUR 135 and JOUR 144	9
Electives Complete six units from: JOUR 061, JOUR 133, JOUR 135 (can repeat only once), JOUR 153, JOUR 155, JOUR 164, JOUR 165, ADV 116, ADV 125, MCOM 180	6
Total Units Required	15

Minor - Public Relations

	Semester Units
MCOM 072 (core GE) (3); JOUR 061 (3); PR 190 or PR 191 (3); PR 099 and PR 192 (6); Approved electives in journalism, advertising, public relations or mass communications (3) (18)	
Total Units Required	18

MS - Mass Communications

Admission Requirements

The school admits students in both fall and spring semesters. Applicants are responsible for obtaining information on admissions criteria and deadlines from the school office.

To be admitted to the program a student must:

1. Complete an application for admission to the university, submit required transcripts and pay the required application fees.

2. Complete a school application, including a 250-500 word essay on the applicant's career objectives.

3. 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. 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.

4. Foreign students must score at least 600 on the TOEFL and must demonstrate English proficiency in a written essay.

5. The Graduate Record Exam (GRE) is required of all applicants. The GRE score for the verbal, quantitative and analytical sections should be about 1050; the verbal score should be about 550.

6. 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, strong GRE scores or other evidence indicating a potential for success in graduate study. In addition to the school application, letters of recommendation and GRE scores should be sent directly to the graduate coordinator. In addition to sending official transcripts to the university, send unofficial copies of the transcripts to the graduate coordinator.

Requirements for Admission to Classified Standing

Students must meet requirements for admission to the Graduate Division; however, no particular specialization in undergraduate work is required of a candidate.

Requirements for Admission to Conditionally Classified Standing

Applicants who have less than a 550 verbal GRE score but who otherwise have strong records may be admitted, contingent on the completion of three to six units of writing courses in the School as prerequisites to the MS program. Prerequisites (writing and/or statistics courses) will not be included in the 30-unit program.

Requirements for Admission to Candidacy

To be admitted to candidacy for the Master of Science degree, a student must first meet the all-university requirements for the degree as stated in this catalog. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape.

The applicant 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 applicant will meet with the graduate coordinator to develop a formal course of study. The M.S. 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 program must be approved by the graduate coordinator before the student may be considered a candidate for the MS - Mass Communications.

Completing Requirements for the M.S. - Mass Communications

Plan A (with Thesis)

Plan A requires successful completion of an acceptable thesis and an oral presentation of the thesis to a faculty/student audience. The thesis proposal must be approved by the graduate committee which will assign three advisers to work with the candidate on the thesis.

Plan B (with Project)

Plan B requires 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. A project proposal must be approved by the graduate committee. When the proposal is approved, the graduate coordinator will assign two advisors to work with the candidate throughout the project. Presentation of the product must be in a form suitable for library storage.

Plan C (Comprehensive Papers)

This option requires taking an additional graduate elective in the School and completing three units of MCOM 298 by researching and writing two 30-40 page comprehensive exam papers: one in media communications and one in the candidate's specialty area.

New prerequisites for program: MCOM 063 (New Media) or equivalent. Demonstrated proficiency in media writing.

	Semester Units
Required Courses	24
Plan A (Thesis)	24
MCOM 210, MCOM 215, MCOM 270, MCOM 290, MCOM 295 and MCOM 298	
Plan B (Project)	24
MCOM 210, MCOM 215, MCOM 270, MCOM 284, MCOM 285, MCOM 290, MCOM 295 and MCOM 298	
Electives	6
Courses at 100- or 200-level in the school or other departments, related to the candidate's career objective, chosen with the coordinator's approval.	
Total Units Required	30

Justice Studies Department

College of Applied Sciences and Arts

MacQuarrie Hall 508
408-924-2940 (Voice)
408-924-2953 (Fax)
www.sjsu.edu/justicestudies

Professors

Yoko Baba
Steven Lee
Richard Perry
Roy R. Roberg, Graduate Advisor

Associate Professors

Cynthia Baroody-Hart
Mark Correia, Chair
Alessandro De Giorgi
Christopher Hebert
James Daniel Lee

Assistant Professors

William Armaline
Danielle Harris
Sang Hea Kil
Claudio Vera Sanchez

Curricula

BS, Justice Studies
BS, Forensic Science, Concentration in Biology
BS, Forensic Science, Concentration in Chemistry
Minor, Human Rights
Minor, Justice Studies
Minor, Legal Studies
MS, Justice Studies

Introduction

The Justice Studies Department provides a broad, research based interdisciplinary curriculum that addresses issues of justice and injustice in our rapidly changing world. The department prepares students for positions in a wide range of justice related careers. Students are also well prepared to pursue further education in justice studies research, law, and policy studies. Our recent graduates have gone on to become professionals within the justice system, have pursued careers in non profit agencies, and have continued their education in advanced degree programs. The Justice Studies Department is a member of the Consortium of Undergraduate Law and Justice Programs.

The BS Degree

The BS degree enables students to be competent professionals in a technologically complex and culturally diverse society. Major requirements are flexible and there are many electives from which to choose. A total of 50 units are required in the major, plus 3 units of introductory statistics.

All undergraduate majors are required to complete a one semester 3-unit internship program except for those students having relevant professional experience (contingent upon approval of the department chair). Internship opportunities are in a variety of public agencies and community organizations. Community college students may transfer a total of 12 units of approved courses toward the major and three units of the required statistics course. Other approved lower division justice studies courses may be used to satisfy general university electives.

The Justice Studies Department offers an 18 unit minor in Justice Studies and cosponsors an 18 unit minor in Legal Studies. The Justice Studies Department also offers a B.S. degree in Forensics Science with either a biology or chemistry concentration. These courses are taught in conjunction with the Biology and Chemistry departments.

The MS Degree

The MS degree prepares students for more advanced graduate study, and for managerial and research positions in the justice studies field. While prospective graduate students are not required to have an undergraduate degree in Justice Studies, they may be required to take additional courses to provide the appropriate foundation in research, statistics and justice studies. Students may transfer 6 units of approved postgraduate courses from other universities. Graduate courses are generally offered at night.

Required seminars emphasize theory, research and policy evaluation. Elective seminars focus on police and social control, law and courts, punishment, juvenile justice, special problems and contemporary topics. The thesis option is designed for those primarily interested in conducting research, and pursuing advanced study toward the doctorate. The non-thesis option is for justice practitioners and/or for individuals interested in managerial positions in the justice system.

Advising

Undergraduate students can see any advisor. A list is posted in front of the Justice Studies Office, MH 508, or available online at www.sjsu.edu/justicestudies/. Students should contact an advisor during regularly scheduled office hours or by appointment. The advisor informs students of major and university graduation requirements, helps in the selection of their course work, assists students in applying for graduation and provides advice about career opportunities. Graduate students can contact the graduate advisor for advising.

Scholarships

University, college and departmental scholarships are available. Eight department scholarships are in memory of former faculty members and students: The Willard “Huck” Schmidt Scholarship, the Daniel Lomio Scholarship, the Paula Stone Hubbell Endowment, the Jeffrey Fontana Memorial Scholarship, the Theresa Edel Scholarship, the Kristofer Boaz Claspill Memorial Scholarship, the Barton Collins Scholarship and the Inger Sagatun-Edwards Collaborative Response Award. Scholarships are awarded Spring semester each year.

Faculty

Faculty members have degrees in criminal justice, law, jurisprudence, linguistics, biology, criminology, justice studies, political science, psychology, sociology and social work. Research and teaching interests include criminal and comparative law; police; law and society; theory; capital punishment; juvenile justice, child abuse and neglect; family law and family violence; forensics; policy evaluation; immigration; punishment; race and racism; violence; and historical and comparative justice issues. Based on scholarly production and faculty citations, the Justice Studies Department is recognized as a leading justice program in California.

BS - Justice Studies

Semester Units

General Education Requirements 42-48
Of the 51 units required by the university, 3-9 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Support of the Major 6
JS 010, JS 012 or JS 025 (3); STAT 095, JS 015 or HS 067 (or equivalent) (3)

Requirements in the Major 45

Justice Studies Core 21
JS 100W, JS 101, JS 102, JS 114, JS 151, JS 181 and JS 189

Additional Courses 24

Students must complete 24 units from the following areas.</cstyle:>

Theory Courses 9-12
Choose nine to twelve units from: JS 103, JS 104, JS 132, JS 153, JS 155, JS 157, JS 185

Methodology Courses 6-9
Complete six to nine units from: JS 107, JS 117, JS 131, JS 143, JS 185, FS 161, FS 162

Critical Inquiry Courses 6-9
Complete six to nine units from: JS 122, JS 128, JS 130, JS 136, JS 144, JS 150, JS 152

Local, Transnational, Historical Courses 6-9
Complete six to nine units from: JS 121, JS 123, JS 127, JS 129, JS 137, JS 145, JS 156, JS 158, JS 171, JS 185

Experiential Learning Courses 3-6
Choose three to six units from: JS 140, JS 141, JS 179, JS 180, JS 184

Additional Electives 19-25
A minor is strongly recommended.

Total Units Required 120

Note: UNVS 015C may be used in lieu of the statistics course required by this major through the Summer 2014.

BS - Forensic Science, Concentration in Biology

Semester Units

General Education Requirements 39
Of the 51 units required by the university, 12 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation and/or Support for the Major 40
CHEM 001A, CHEM 001B, CHEM 055, CHEM 112A, CHEM 112B, CHEM 113A, CHEM 135, MATH 030, PHYS 002A and PHYS 002B (37); STAT 095 or HS 067 (3)

Major Requirements 40
JS 010, JS 100W, JS 189, FS 161, FS 162, FS 167, BIOL 001A, BIOL 001B, BIOL 006, BIOL 115, BIOL 135 and BIOL 135L

Electives 9

Complete 9 units from the following. Other electives may be substituted with advisor approval.</cstyle:>

First Tier Electives 3
ANTH 157 or JS 106

Second Tier Electives 6
Select two from: JS 171, JS 180, JS 181, JS 185, BIOL 116, BIOL 117, ANTH 157 or JS 106 may also be selected if not chosen as first tier elective; other electives require advisor approval

Total Units Required 129

BS - Forensics Science, Concentration in Chemistry

Semester Units

General Education Requirements 39
Of the 51 units required by the university, 12 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation and/or Support for the Major 41
BIOL 001A, CHEM 001A, CHEM 001B, CHEM 055, MATH 030, MATH 031, PHYS 070, PHYS 071 and PHYS 072 (33); STAT 095 (3)

Major Requirements 39
JS 100W, FS 011, FS 161, FS 162, FS 169, CHEM 112A, CHEM 112B, CHEM 113A, CHEM 120S, CHEM 135, CHEM 145, CHEM 155 and CHEM 160

Electives 8

Complete 8 units from the following. Other electives may be substituted with advisor approval.</cstyle:>

First Tier Electives
FS 166 and an additional course from: FS 167, FS 168, ANTH 157, JS 106, BIOL 001B, CHEM 113B

Second Tier Electives
Select from remaining courses in First Tier, or: FS 160, FS 163, FS 164, FS 165, JS 143, JS 171, JS 180, BIOL 006, BIOL 115, BIOL 135, BIOL 135L, CHEM 101, CHEM 118, CHEM 131A, CHEM 173

Total Units Required 129

Minor - Human Rights

The Minor in Human Rights is meant to prepare students for careers in or 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.

Semester Units

Required Courses 9
JS 025, JS 171 and JS 179 (capstone)

Substantive Electives 6

Choose two courses from different departments.</cstyle:>
Complete two courses from: AAS 175, AFAM 134, AFAM 142, AFAM 151, ANTH 115, COMM 174, ECON 112, ENVS 105, ENVS 140, ENVS 152, ENVS 159, GEOG 112, GEOG 115, HIST 136, HIST 186, HIST 188, JS 127, JS 132, MAS 105, MAS 120, MAS 130, NUFS 139, POLS 130, POLS 135, POLS 147, POLS 150, POLS 152A, SCWK 190, SOCI 116, SOCI 118, SOCI 120, SOCI 162, SOCI 164, SOCI 165, SOCI 172, WOMS 102, WOMS 112

Total Units Required 15

Minor - Justice Studies

Semester Units

JS 010 (3); Complete two courses from: JS 102, JS 103, JS 104, JS 151 (6); Upper division electives (9) (18)

Total Units Required 18

Minor - Legal Studies

Semester Units

POLS 120 (3); ECON 141, ENVS 124 or PHIL 155 (3); JS 101, JS 122, JS 123, JS 132, MAS 127 or SOCI 151 (3); AFAM 134, HIST 171, MDES 108, POLS 121A or POLS 121B (3); COMM 133F, MCOM 101 or BUS 186 (3); JS 103, COMM 147P or POLS 122 (3-4) (18-19)

Total Units Required 18-19

MS - Justice Studies

Graduate Coordinator: Dr. Roy Roberg 408-924-2914

Admission

To be considered for admission to the Justice Studies Department, applicants must have a minimum grade point average of 3.0 in the last 60 units of university course work. Applicants must also submit GRE scores (General test only; no minimum score is required for your application to be considered). Admission decisions will be based on a weighted assessment of the applicants' grade point average, GRE scores, course work and preparation, two letters of recommendation from academics, and personal statement of purpose.

Letters of recommendation should discuss the applicant's ability to write research-oriented papers and to evaluate/analyze empirically based research (e.g. research articles). The personal statement of purpose must include the following:

Describe in detail (500 words or less) the reasons you want to attend our graduate program.

Admission to the graduate program may be through classified standing or conditionally classified standing.

1. Classified Standing

In addition to the admission requirements of the university, the Justice Studies Department has requirements for being admitted to classified standing:

Completed undergraduate prerequisites required by the department, including a research methods course (e.g., JS 105), and a statistics course (e.g., STAT 95). If a student's baccalaureate degree is not in criminal justice, criminology, or justice studies, additional departmental courses are usually required to enhance the student's knowledge in these areas (JS 118, and JS 159; or their equivalent).

2. Conditionally Classified Standing

Applicants meeting the university's requirements for the Graduate Division but lacking either of the above requirements for classified standing may, at the department's discretion, be considered for admission to conditionally classified standing. Applicants who have not met the above departmental prerequisites (1.b) must satisfactorily complete the requirements in their first year.

International (Foreign) Students

Documentation of the applicant's TOEFL score should accompany other admission material. For TOEFL Requirements see Policies and Procedures section, Graduate and Post baccalaureate information.

Candidacy

To be admitted to candidacy for the Master of Science degree in Justice Studies, students must meet the general university requirements for admission to candidacy outlined in the Academic Regulations section of this catalog. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape. In addition, the following departmental requirements apply:

1. Completion of all course requirements with a grade point average of 3.0 ("B") or better, and

2. Completion of JS 201, JS 202, JS 203, and JS 204 with a grade point average of 3.0 ("B") or better, and

3. Obtain an approved Master's Degree Program from the Associate Vice President for Graduate Studies and Research done in consultation with the department's graduate coordinator.

As soon as admitted to classified standing, demonstrated "Competency in Written English" and having completed 12 units of graduate study the student should meet with the department's graduate coordinator to draft an approved program. This program must identify thirty (30) units of course work as outlined in the following list of course requirements.

Completing Requirements for the MS - Justice Studies

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.

Plan B (without Thesis)

Plan B provides an advanced program of study for professionals and those who want to pursue careers in the justice studies field.

Course Requirements

Each student must take a core curriculum of 15 units (JS 201, 202, 203, 204, and 216). The thesis option requires six thesis units, plus 9 elective units; the non-thesis option requires completion of 18 units of core curriculum, plus 12 elective units. 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 30 units of required graduate course work. Students who are academically or administratively disqualified from the program, will not be readmitted.

	Semester Units
Core Courses JS 201, JS 202, JS 203, JS 204 and JS 289	15
Complete Plan A or Plan B	15
With Thesis (Plan A) JS 299 (6); Three elective courses (9)	
Without Thesis (Plan B) JS 297 (3); Four elective courses (12)	
Total Units Required	30

Kinesiology Department

College of Applied Sciences and Arts

Spartan Complex, SPX 56
408-924-3010

Professors

Gong Chen
Craig J. Cisar
Barbara J. Conry
Nancy L. Megginson
V. Gregory Payne
Shirley H. M. Reekie, Chair
Bethany Shifflett
Susan Wilkinson
Emily H. Wughalter

Associate Professors

Stanley B. Butler
Theodore Butryn
KyungMo Han
Matthew A. Masucci
Peggy Plato
Tamar Semerjian

Assistant Professors

Jessica Chin
Jay Johnson
James Kao
Sonja Lilienthal

Curricula

BS, Kinesiology
BS, Kinesiology, Preparation for Teaching
BS, Athletic Training
Minor, Kinesiology
MA, Kinesiology
MA, Kinesiology, Concentration in Athletic Training
MA, Kinesiology, Concentration in Exercise Physiology
MA, Kinesiology, Concentration in Sports Management
MA, Kinesiology, Concentration in Sports Studies

Introduction

The Department of Kinesiology assumes a contemporary leadership role in the California State University system and across the nation in the field of kinesiology. Kinesiology is defined as the study of the science and art of human movement that encompasses the study of the human organism through human movement. The department is focused on providing opportunities for academic growth and development leading to professional career opportunities in kinesiology and related health fields.

The undergraduate major program leads to the Bachelor of Science degree in Kinesiology and stresses both theoretical and practical objectives. Emphases within the major include: Adapted Physical Activity, Individualized Studies, Exercise and Fitness Specialist, Movement Science, Pre-Professional, Societal Studies, Sport Management, Teaching Single Subject and Teaching Adapted Physical Education. A BS in Athletic Training is also offered. The department also offers courses to meet the interests and needs of all students as they fulfill the general education and the two-unit physical activity graduation requirements.

The Master of Arts degree in Kinesiology provides study in the field of human movement, a sound foundation for the development of research skills, and a basis for future study in an advanced degree program. A program of study may be developed in any of the following areas: Adapted Physical Activity, Athletic Training (NATA Accredited Program), Biomechanics, Exercise Physiology, Measurement, Motor Development, Motor Learning, Sport History, Sport Management, Sport Philosophy, Sport Psychology, and Sport Sociology.

Active student organizations such as Phi Epsilon Kappa (PEK), the Sports Medicine Club, the Sports Management Club, and Adapted Physical Activity Club provide students with opportunities to form interest groups that reflect their career goals and professional interests. PEK is an honorary society that supports the department through service and professional commitment. The Sports Medicine Club has focused membership related to sports medicine interests that includes involvement of the undergraduate and graduate athletic training students. The Sports Management Club is an organization focused on serving students studying in the department's sports management emphasis. The Adapted Physical Activity Club is a student service organization that focuses on the promotion and advocacy of physical activity opportunities for individuals with disabilities.

University Physical Education Graduation Requirement

The department has an array of activity courses planned to meet the interests and needs of all students. Students may select any activity if the prerequisite has been met (see note under lower division courses for specifics).

To meet the graduation requirement, all students must successfully complete two units of physical education activity from two different courses. Additional units in physical activity can apply toward graduation electives. See index for further details concerning the physical activity graduation requirement.

Departmental Honors Program

Graduation with departmental honors in Kinesiology can be achieved by successful completion of the departmental honors program open to those senior majors with a cumulative grade point average of 3.2 or higher and a 3.5 or higher average in the major.

The Center for International Sport and Human Performance

The center's unique role is to promote and facilitate cross-national and cross-cultural interaction of individuals and their ideas in the context of sport and human performance. The center seeks to provide culturally enriching experiences to faculty and students, as well as the community, by promoting kinesiology activities that would not otherwise be available.

BS - Kinesiology

Satisfactory completion of the requirements of the four-year major program in kinesiology leads to a BS degree. The program is based upon the discipline of kinesiology and stresses both theoretical and practical objectives. A minimum passing grade of "C-" in all major courses is required for all kinesiology majors. Nine emphases and one concentration are available in the program.

Semester Units

General Education Requirements 36-39
Of the 51 units required by the university, 12-15 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Supporting Courses 18
BIOL 065, BIOL 066, CHEM 030A, KIN 100W and Mathematical Concepts

Requirements in the Major 61

Core Requirements 25
KIN 070, KIN 155 and KIN 158 (9); KIN 160, KIN 161 or KIN 164 (3); KIN 165 or KIN 166 (3); KIN 175 and KIN 185 (6); four activity courses from four of six different Movement areas (in addition to the 2 unit kinesiology requirement) (4)

Emphasis Requirements 36

Choose one emphasis.</cstyle:>
Adapted Physical Activity Emphasis, Pre-Professional, Exercise and Fitness Specialist, Movement Science, Societal Studies, Sport Management, Individualized Studies. See department for approved clusters of electives.

Electives 0-3

Total Units Required 120

Note: UNVS 015C may be used in lieu of the statistics course required by this major through the Summer 2014.

BS - Athletic Training

Semester Units

General Education Requirements 39
Of the 51 units required by the university, 12 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Supporting Courses 18
BIOL 065, BIOL 066, CHEM 030A and KIN 100W (15); Mathematical Concepts, GE Area B4 (3)

Requirements in the Major 61

Core Requirements 25
KIN 070, KIN 155 and KIN 158 (9); KIN 160, KIN 161 or KIN 164 (3); KIN 165 or KIN 166 (3); KIN 175 and KIN 185 (6); four activity courses from four of six different Movement areas (in addition to the 2 unit kinesiology requirement) (4)

Athletic Training Concentration 36
KIN 167 or KIN 168 (3); KIN 186, KIN 188, KIN 189, KIN 191A, KIN 193, KIN 194, KIN 195, KIN 197A, KIN 197B, KIN 197C and KIN 197D (21); KIN 162 and KIN 191B (6); NUFS 008 or NUFS 009 (3); HS 001 or HS 104 (3)

Total Units Required 120

BS - Kinesiology, Preparation for Teaching

This major is designed for students interested in teaching physical education in high school or middle school. The following course work satisfies San José State University's requirements for a BS in Kinesiology. In addition, this program is approved by the California Commission on Teacher Credentialing (CCTC) as subject matter preparation for a single subject credential in physical education.

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 index) 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.

Semester Units

General Education Requirements 39
Of the 51 units required by the university, 12 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major and Supporting Courses 18
BIOL 065, BIOL 066, CHEM 030A, KIN 100W and Mathematical Concepts GE Area B

Requirements in the Major 61

Core Requirements 25
KIN 070, KIN 155 and KIN 158 (9); KIN 160, KIN 161 or KIN 164 (3); KIN 165 or KIN 166 (3); KIN 175 and KIN 185 (6); four activity courses from 4 of 6 different Movement areas (4)

Emphasis Requirements 36

Choose one emphasis.</cstyle:>

Single Subject Teaching Emphasis 36
KIN 156 (3); KIN 178 (3); KIN 165 or KIN 166 (3); KIN 168, KIN 170B, KIN 171A, KIN 172, KIN 173, KIN 179 and KIN 188 (18); one unit of activity from the following: general fitness (not aquatic), swimming, gymnastics, racket sport (4); additional units to be determined in consultation with an assigned Kin advisor (5)

Adapted Physical Education Emphasis 36
KIN 107, KIN 156 and KIN 159 (7); KIN 165 or KIN 166 (3); KIN 178 (3); KIN 168, KIN 170B, KIN 170C, KIN 172, KIN 173, KIN 174, KIN 179 and KIN 187 (22); activity courses (by advisement) (1)

Total Units Required 120

Supplementary Authorizations

Students who want to teach physical education but are completing, or have completed, a credential in another area should apply for a supplementary authorization. See a Department of Kinesiology advisor who specializes in teacher preparation for specific content requirements for a supplementary authorization approved by the California Commission on Teacher Credentialing.

Minor - Kinesiology

Through advisement, students can develop the electives that help to focus their minor program of study. Contact the department for academic advisement.

	Semester Units
KIN 070 (3); three activity courses from three different movement areas approved by the advisor; these courses are in addition to the two unit kinesiology graduation requirement (3); KIN 160, KIN 161, KIN 164, KIN 167 or KIN 168 (3); KIN 155, KIN 158, KIN 165 or KIN 166 (3); Kinesiology upper division electives (6) (18)	
Total Units Required	18

Undergraduate Athletic Training Education Program

This program must be satisfied concurrently with successful completion of the Bachelor of Science in Kinesiology at SJSU. It prepares students for entry-level careers in the care, prevention and rehabilitation of athletic injuries. The Athletic Training Education program is CAATE accredited.

The mission of the Athletic Training Concentration is to prepare qualified athletic trainers for the profession by establishing their eligibility to take the Board of Certification (BOC) examination. The emphasis develops cognitive skills, psychomotor mastery, and affective values in: (1) injury prevention; (2) recognition and evaluation of injuries/illnesses; (3) management/treatment and disposition of injuries/illnesses; (4) rehabilitation; (5) organization and administration of an athletic training education program; and (6) education and counseling of athletes, parents, and coaches. Student education occurs in courses and in a variety of clinical experiences.

Clinical Requirements

In addition to completing the degree requirements in the concentration, students who seek eligibility for this certification are required to have CPR and First Aid certifications and to complete a clinical practicum component. The clinical component provides hands-on experience in a variety of settings, including hospitals, sports medicine clinics, high schools, and colleges. Students enrolled in the Athletic Training Concentration who also seek BOC certification must submit evidence that the following requirements have been met. Application materials for the Spring and Fall semesters must be received by March 15 and October 15 respectively.

1. Applicants must submit a completed California State University application to the Office of Admission and Records at San José State University

2. Applicants must submit a completed Athletic Training Education Program application to the Department of Kinesiology in care of the undergraduate Athletic Training Education Program Director. This includes the online data submission and completed forms outlined below.

3. Minimum of 50 hours of athletic training observation.

4. Official transcript(s).

5. Two letters of recommendation verifying ability to complete successfully the academic rigors of the program, interact effectively with athletes and other allied medical staff, and work as a professional in an allied health field.

6. Interview with the Undergraduate Athletic Training Advisory Council and Undergraduate Athletic Training Education Program Director/Faculty.

7. Proof, or waiver, of hepatitis B vaccine.

8. Proof of a physical examination for the ergonomic tasks required to complete the CAATE competencies for athletic training knowledge and skill acquisition.

9. Proof of CPR and First Aid Certification (American Red Cross or American Health Association accepted, other certifications contact the program director for validation).

10. Completed Technical Standards form.

11. Completed or concurrent enrollment in KIN 188/189: Prevention and Care of Athletic Injuries Lecture/Lab.

Limitations: Due to guidelines set forth by CAATE, enrollment in the practicum sites may be limited, and thus completion of preparation for certification may be delayed.

Graduate Program in Kinesiology

Graduate Coordinator: Dr. Theodore Butryn

Requirements for Admission to Classified Standing

The Department of Kinesiology requires the following of all applicants seeking admission to classified standing in the MA - Kinesiology in addition to meeting requirements for admission to the Graduate Division:

1. A baccalaureate degree with a major or a minor in Kinesiology or successful completion of a maximum of 12 units of foundation course work as assigned by the Graduate Coordinator or an assigned Academic Advisor.

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 Mentor Application, including the Statement of Purpose on the application.

4. A combined GRE General Test score of 900 (verbal plus quantitative).

5. Two (2) completed recommendation forms (using an online submission).

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 has neither a major nor a minor in Kinesiology; has a grade point average below 3.0 in the last 60 semester units (or 90 quarter units); or scores below a 900 in the GRE General Test. The student may become eligible for admission to classified standing upon: satisfactory completion of prescribed undergraduate course deficiencies; and/or completion of six units of graduate course work with a minimum grade point average of 3.0 in each course.

Requirements for Admission to Candidacy for the MA Degree

General university requirements for admission to candidacy for the Master of Arts degree are outlined in detail in this catalog. 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 “Competency in Written English” for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape. Following are additional requirements of the Department of Kinesiology for the Master of Arts degree.

Upon admission to the Graduate Division and prior to registration, each student should meet with a graduate academic advisor in the student’s emphasis area of interest. If there are any deficiencies in a student’s undergraduate work, additional foundation courses may be required. Foundation courses will not be counted in the master’s program.

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 emphasis area of interest.

The proposed program must be approved by the graduate advisor, the graduate coordinator, and by the Office of Graduate Studies before the student is considered a candidate for the Master of Arts degree.

Completing Requirements for the MA - Kinesiology

Plan A (with Thesis)

The purpose of this plan is to provide concentrated study in one aspect of Kinesiology. It is crucial that students electing Plan A identify the focus of their concentration early so that an appropriate focus and thesis topic may be developed.

Required courses are KIN 250, KIN 251, and KIN 299 (6 units). Electives (18 units) from a specialization based on student needs and interest as determined in consultation with a graduate academic advisor. A maximum of 9 units may be selected from outside the Department of Kinesiology.

Plan B (Non-Thesis)

This plan is for students interested in producing a creative work in Kinesiology. The plan requires a special project in place of a thesis.

Required courses are KIN 250, KIN 251, and KIN 298 (3 units). Electives (21 units) form a specialization based on student's needs and interest as determined in consultation with a graduate academic advisor. A maximum of 9 units may be selected from outside the Department of Kinesiology.

Note: Athletic Training has a specific course structure and a separate application process in order to meet NATA accreditation standards.

MA - Kinesiology

Semester Units

Plan A (With Thesis) 30

Required Courses 6
KIN 250 and KIN 251

Electives 18
9 units maximum from outside Kinesiology

Thesis or Project 6
KIN 299

Plan B (Non-Thesis) 30

Required Courses 6
KIN 250 and KIN 251

Electives 21
9 units maximum from outside Kinesiology

Special Studies 3
KIN 298

Total Units Required 30

MA - Kinesiology, Concentration in Athletic Training

Semester Units

Required Course 6
KIN 250 and KIN 251

Athletic Training Courses 24
KIN 268, KIN 269, KIN 272, KIN 273, KIN 292A, KIN 292B, KIN 293A, KIN 293B, KIN 293C and KIN 293D

Electives 3-6

Thesis or Project 3-6
Plan A (Thesis): KIN 299 (6) or *Plan B (Non-Thesis):* KIN 298 (3)

Total Units Required 39

MA - Kinesiology, Concentration in Exercise Physiology

Semester Units

Required Course 6
KIN 250 and KIN 251

Exercise Physiology Courses 9
KIN 255, KIN 256 and KIN 285

Electives 9-12
Electives determined based on a student's background, interests, and career goals

Thesis or Project 3-6
Plan A (Thesis): KIN 299 (6) or *Plan B (Non-Thesis):* KIN 298 (3)

Total Units Required 30

MA - Kinesiology, Concentration in Sport Management

Semester Units

Required Course 6
KIN 250 and KIN 251

Exercise Physiology Courses 15
KIN 280, KIN 281, KIN 282, KIN 283 and KIN 284

Electives 3-6

Thesis or Project 3-6
Plan A (Thesis): KIN 299 (6) or *Plan B (Non-Thesis):* KIN 298 (3)

Total Units Required 30

MA - Kinesiology, Concentration in Sport Studies

Semester Units

Required Course 6
KIN 250 and KIN 251

Sports Studies Courses 6
KIN 264 and KIN 267

Electives 12-15
Electives determined based on a student's background, interests, and career goals

Thesis or Project 3-6
Plan A (Thesis): KIN 299 (6) or *Plan B (Non-Thesis):* KIN 298 (3)

Total Units Required 30

A final oral defense and demonstrated competency in written English are required in both Plans A and B.

Latin American Studies Program

College of Humanities and the Arts

Clark Hall 420G
408-924-4626

Professors

Anne Fountain, Coordinator

Curricula

Minor, Latin American Studies

Introduction

The interdepartmental minor in Latin American Studies 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, Mexican American studies, philosophy, political science and theatre arts.

Minor - Latin American Studies

	Semester Units
Core Requirements	9
Complete three of: SPAN 102B, HIST 162, either FREN 102B or PORT 102B, or other courses substituted by the coordinator from the list of electives	
Electives	9
Humanities: ARTH 182A, DANC 102, SPAN 140A, SPAN 140B, SPAN 160A, SPAN 160B, SPAN 160C (*)	
Social Sciences: HIST 162, HIST 163, HIST 164, HIST 165, HIST 166, MAS 105, POLS 146, ANTH 178, GEOG 150	
Business: BUS 161A	
Total Units Required	18

*Spanish sequence (SPAN 160A, SPAN 160B and SPAN 160C) when focus is on Latin American Studies.

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.

Library and Information Science

College of Applied Sciences and Arts

Clark Hall 417
408-924-2490
http://slisweb.sjsu.edu/

Professors

William Fisher
Debra Hansen
Sandra Hirsh, Director
Ziming Liu
David Loertscher
Linda Main
Judith Weedman

Associate Professors

Anthony Bernier
Patricia Franks
Geoffrey Liu

Assistant Professors

Joni Bodart
Chris Hagar
Lili Luo
Kristen Rebmann
Michael Stephens

Curricula

Credential, California Library Media Teacher Services
MLIS, Master of Library and Information Science

Introduction

Our graduates enter the professional world with a master's degree in Library and Information Science fully-accredited by the American Library Association. While educated in the academic discipline of Library and Information Science and the professional competencies of Librarianship, these highly skilled men and women carry job titles as diverse as records manager, children's librarian, software developer, reader's advisor, Internet trainer, historical researcher, information analyst, teen specialist, teacher-librarian and freedom of information and protection of privacy officer. Career opportunities are limited only by one's imagination, ambition and degree of mobility.

All courses are offered totally online. Our students interact with peers and instructors through web conferencing, social networking platforms, a web-based learning management system, and immersive environments. Most course content is delivered asynchronously - giving our students the freedom to access the course at any time they choose, from any location. Some courses also include occasional "live" synchronous sessions. By using sophisticated technology, our students are better prepared to successfully navigate a rapidly changing information landscape and apply technology in their professional lives.

Please note: The School does not have a separate on campus and online programs. We offer one MLIS degree delivered completely online. See http://slisweb.sjsu.edu for full information.

Credentials

To qualify for the California Library Media Teacher Services Credential with authorization as a library media teacher, the student must complete the credential course work outlined in this catalog, and must either already hold a valid California teaching credential or complete the requirements for a basic teaching credential (see College of Education section of this catalog for requirements for a teaching credential).

MLIS - Master of Library and Information Science

Requirements

Applicants who meet the following requirements will be considered for admission into SLIS (School of Library and Information Science):

- A Bachelor's degree from any regionally acredited institution in any discipline with an overall GPA of at least 3.0, or a Master's degree regardless of GPA.
- A general understanding of computers and technology.
- The School requires that all students have computer access from home.

In addition to the same requirements mentioned above, **International Applicants** must meet the following:

- TOEFL score of 600 (paper version) or 250 (computer version) or 100 (Internet-based)

Completing Requirements for the MLIS

The Master's degree in Library and Information Science requires successful completion of 43 semester units. Of those 43 units, 16 are required of all students.

Beyond the five initial required courses, and the final required course, students build their individually-designed programs in concert with their faculty advisers.

	Semester Units
Required Courses LIBR 200, LIBR 202, LIBR 203, LIBR 204 and LIBR 285 (13); LIBR 289 or LIBR 299 (3)	16
Elective Courses Complete twenty-seven units from: LIBR 210, LIBR 220, LIBR 221, LIBR 228, LIBR 230, LIBR 231, LIBR 232, LIBR 233, LIBR 234, LIBR 240, LIBR 241, LIBR 242, LIBR 243, LIBR 244, LIBR 245, LIBR 246, LIBR 247, LIBR 248, LIBR 249, LIBR 250, LIBR 251, LIBR 256, LIBR 257, LIBR 259, LIBR 260, LIBR 261, LIBR 262, LIBR 263, LIBR 264, LIBR 265, LIBR 266, LIBR 267, LIBR 268, LIBR 269, LIBR 270, LIBR 271A, LIBR 272, LIBR 275, LIBR 280, LIBR 281, LIBR 282, LIBR 283, LIBR 284, LIBR 286, LIBR 287, LIBR 293, LIBR 294, LIBR 295, LIBR 298	27
Total Units Required	43

Note: LIBR 200, LIBR 202, and LIBR 204 must be passed with a grade of 'B' or better.

Other Areas

Students can also transfer up to 9 units from other academic department subject to the School's transfer policies.

Culminating Experience

An e-portfolio or completion of a thesis is required of all students. The e-portfolio is incorporated into LIBR 289, Advanced Topics in Library and Information Science. The thesis option requires advance arrangements with a thesis/project committee and successful completion of LIBR 285, Research Methods in Library and Information Science, or its equivalent.

English Competency

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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape.

Prior to advancement to candidacy, all students will complete the university upper division writing requirement and will have passed with a grade of "B" or better or will have passed the equivalent university examination.

Linguistics and Language Development Department

College of Humanities and the Arts

Clark Hall 473
408-924-4413

Professors

Rosemary Henze
Thom Huebner
B. Kumaravadivelu
Manjari Ohala
Swathi Vanniarajan, Chair

Associate Professors

Stefan Frazier

Assistant Professors

Hahn Koo
Scott C. Phillabaum
Daniel Silverman
Soteria Svorou

Curricula

BA, Linguistics
Minor, Linguistics
Certificate, Computational Linguistics
Certificate, Undergraduate TESOL
Certificate, Graduate TESOL
MA, Linguistics
MA, Teaching English to Speakers of Other Languages (TESOL)

Introduction

The two primary goals of the Department of Linguistics and Language Development (LLD) are understanding how the languages of the world work and addressing the English language needs of our culturally diverse society. For information on any of our programs, call the department office at 408-924-4413 and ask for the linguistics or TESOL coordinator.

BA in Linguistics

The BA - Linguistics undertakes the scientific study of the nature, structure and function of language. Linguists study the origins of language, the meaning and history of words, 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. The major provides 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. Transfer students are welcome in the program and need no prerequisites before declaring a major in linguistics. Students should see the general education advisor to transfer general education units and the linguistics coordinator to transfer any other classes related to the major. Those desiring more information about the BA - Linguistics should contact the linguistics coordinator.

Minor in Linguistics

The minor in linguistics 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 by their majors.

MA in Linguistics

The MA - Linguistics provides students with an interdisciplinary education in the scientific study of language. Courses in general and computational linguistics serve students interested in cognitive linguistics, speech synthesis, machine speech recognition, and language variation and change. Graduates in linguistics offer a set of highly specialized skills to computer companies working in speech technology and artificial intelligence. Many pursue careers with companies specializing in these areas. A small but significant number of linguistics graduates enter PhD programs for more advanced study. Other graduates pursue teaching careers in language and linguistics in domestic and overseas institutions. The department offers class scheduling to accommodate the needs of working students with small classes that promote faculty-student collaboration. Those desiring more information about the MA - Linguistics should contact the linguistics coordinator.

MA in TESOL

The MA - TESOL (Teaching English to Speakers of Other Languages) 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 strikes a balance between theory and practice. Graduates from the MA - TESOL program staff many of the area's English as a Second Language programs at the 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 Taiwan, Korea, Japan, Hungary, Mexico and other countries. MA - TESOL graduates are also eligible to teach abroad through the U.S. government sponsored Fulbright and English Teaching Fellow programs. Any undergraduate major is appropriate preparation for this degree. Courses are scheduled to accommodate the needs of working students. Those desiring more information about the MA - TESOL should contact the TESOL coordinator.

Certificates in TESOL

The department offers both an undergraduate and graduate certificate in TESOL. The former is for students who have not yet completed the BA while the latter is for those who have. Students complete 18 units of courses related to the structure of English and teaching of English to speakers from other language backgrounds. Courses in the undergraduate certificate are at the undergraduate level, while most of the courses in the graduate certificate are at the graduate level and overlap with the MA - TESOL. It is not uncommon for students doing a graduate certificate in TESOL to continue on for the MA - TESOL. Students seeking an undergraduate certificate may register for classes through Open University or take the required courses as electives in their degree program. Students seeking a graduate certificate may register for classes through Open University or apply using the regular graduate application form. Those desiring more information should contact the TESOL coordinator.

Certificate in Computational Linguistics

This certificate prepares students for analyzing language structures in the environment of human language interfaces in software development. In addition to a programming requirement, students may take a specified set of 18 units as part of their degree requirements. Those desiring more information should contact the computational linguistics coordinator.

General

Approximately 25% of graduate students come from other countries and contribute greatly to our programs. The success rate of international students is comparable to that of domestic students. International students who do not meet our TOEFL or IELTS requirement may contact Studies in American Language for information on language preparation.

Upon entering a program in the Department of Linguistics and Language Development, every student is assigned to a faculty advisor. Students meet with their advisors at least once a semester in order to plan their program for the following semester. Advisors are also available to assist students with procedures for transferring units, moving to classified status, getting credit for foreign language proficiency, etc.

Students in all our programs communicate with each other through the active Linguistics and Language Development Student Association (LLDSA), which works with faculty to see that student concerns are speedily addressed and to bring leaders in the field to speak to the department through its colloquia series. Linguistics students have the opportunity to network nationally and internationally through the conferences and institutes of the Linguistics Society of America while TESOL students do the same through their international professional organization and its California affiliate, CATESOL. Students in both programs are invited to join the American Association for Applied Linguistics, the International Association of World Englishes, and other organizations in the field.

Silicon Valley provides a concentration of computer companies that regularly launch projects in such linguistically-related fields as natural language processing, speech recognition and speech synthesis. Likewise, a concentration of English as a Second Language programs is found in the area's numerous community colleges, adult schools, nonprofit organizations, private language schools and workplace literacy programs. Students in LLD's programs benefit from both practical experience and internships within these programs. In addition, limited opportunities to serve as paid tutors and research assistants are available within the department.

Faculty expertise includes second language acquisition, language contact, phonetics, experimental phonology, phonology, semantics, cognitive linguistics, educational issues of language minority students, task-based teaching and learning, world Englishes, pedagogical English grammar, second-language writing pedagogy, literacy for culturally diverse learners, the psychology of language processing, corpus linguistics, speech technology and natural language processing. The faculty as a whole are noted for excellence in teaching.

Among the department's many distinguished alumni are Amy Tan, author of *The Joy Luck Club*; Lily-Wong-Fillmore, an internationally known expert in second language acquisition, Cynthia Chatterjee, a Palo Alto based psychiatrist and Susan Crandall, an attorney. Our MA - Linguistics graduates have entered PhD programs at UC Berkeley, Stanford, UC Santa Barbara, UC San Diego, UC Santa Cruz, the University of Colorado at Boulder, Ohio State University, The University of Washington, and the University of Southern California.

BA - Linguistics

Semester Units

General Education Requirements 45-48
Of the 51 units required by the university, 3-6 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Support for the Major (Language) 0-10
One year of college level language other than student's native language (10), demonstrated equivalent competence (0), or one year of college level American Sign Language (6). For students for whom English is not the native language, one year of college level English study may fulfill this requirement.

Requirements in the Major 36

GE Basic Skills requirements must be completed prior to taking courses in the major.</cstyle:>

Required Common Core 21
LING 101, LING 111, LING 112, LING 113, LING 114, LING 125 and LING 162

Electives in the Major 15
See discussion of elective requirements (below).

Electives 24-37

Total Units Required 120

Twelve units of the elective courses must be linguistics courses. All electives must be chosen with prior advisor approval. One lower division linguistics course may be used as part of the 36-unit Requirements in the Major. Choose among LING 020, LING 021, or LING 022.

By a careful selection of electives in the major, students can emphasize special interest areas such as Natural Language and Computers or Teaching English as a Second or Foreign Language (TESL/TEFL). Elective courses specifically referring to the Natural Language and Computers area of interest are: LING 115, LING 124 and LING 165. Elective courses specifically relating to the TESL/TEFL area of interest are LLD 108, LLD 107, and LING 166. 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.

Minor - Linguistics

The minor in Linguistics 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.

Semester Units

Core Requirements 9
LING 101, LING 111 and LING 112

Electives 6
Six units of upper division course work, approved by the linguistics advisor

Total Units Required 15

Language requirement: One year college level foreign language study or equivalent.

Certificate - Computational Linguistics

The Certificate in Computational Linguistics 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.

To receive the Certificate in Computational Linguistics, students must complete the following 18 units of course work and fulfill the programming requirement:

	Semester Units
LING 101, LING 111, LING 112, LING 115, LING 124 and LING 165 (18)	
Total Units Required	18

Programming requirement: Demonstrated competence with a programming language, such as PERL, Java script, C, or C++. This requirement may be fulfilled by completing a course at SJSU or a community college, or by providing work demonstrating knowledge of a programming language.

Any matriculated upper division undergraduate or graduate student may pursue this certificate. Non-matriculated 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.

Teaching English to Speakers of Other Languages (TESOL)

An 18-unit certificate in Teaching English to Speakers of Other Languages (TESOL) is also available to both undergraduate and graduate students. The certificates are 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 certificates are approved by the university, they do not provide certification, accreditation or credentialing approved by the Commission on Teacher Credentialing. Please contact the TESOL coordinator for advising before beginning a certificate program.

Certificate - Undergraduate TESOL

To receive the undergraduate Certificate in TESOL, students must complete the following eighteen units of required course work:

	Semester Units
Core Courses	12
LING 101, LING 107, LING 108 and LING 166	
Electives	6
Choose two courses with the approval of the TESOL Coordinator	
Total Units Required	18

Any matriculated upper division student may pursue this certificate. Students must maintain a 3.0 average in these courses to be awarded the certificate.

Certificate - Graduate TESOL

Any matriculated graduate student may pursue this certificate. Students must maintain a 3.0 average in these courses to be awarded the certificate. To receive the certificate students must complete the following 18 units:

	Semester Units
LING 101, LING 107, LLD 270, LLD 271, LLD 280 and LLD 283 (18)	
Total Units Required	18

Three units (of an equivalent course) are transferable into the program. Foreign students must have minimum score of 577, computer score of 233 or Internet-based score of 90 on the TOEFL or 7.0 on IELTS. Students must maintain a 3.0 minimum grade point average throughout the program.

Language Requirement

The first-year, college level courses in a language other than the student's native language or a demonstrated equivalent language background satisfy the language requirement. Courses taken to satisfy this requirement may satisfy other requirements, e.g., where applicable, supporting courses for a major or required courses in a major.

It is recommended that students planning to enter the MA program in Teaching English to Speakers of Other Languages complete their language requirements in the language relevant to their intended place of employment.

Language Development

The Department of Linguistics and Language Development offers two courses in academic English for incoming freshmen and transfer students. Students who score 141 and below on the English Placement Test (EPT) should take LLD 1. Students who score between 142 and 148 on the EPT should take LLD 2. All students taking LLD 1 must also enroll in an activity section. Activity sections begin the second week of classes.

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

Students are eligible for admission as classified graduate students if they hold an accredited baccalaureate degree and otherwise satisfy the graduate level admissions requirements for San José State University (in the case of students with baccalaureate degrees from a university where English is not the principal language of instruction, this includes a minimum score of 577, 233 on the computerized version, or 90 on the Intenet based version on the TOEFL or 7.0 on IELTS). In addition, students in the MA Linguistics program are eligible for admission as classified graduate students if they have completed at least nine semester units of acceptable work in linguistics equivalent to San José State University's Introduction to Linguistics (LING 101), Introduction to Phonetics (LING 111), and Introduction to Syntax (LING 112) with a grade of "B" or better in each of these three classes. For students in the MA TESOL program, two courses are prerequisite for admission to classified standing: Introduction to Linguistics (LING 101), and Patterns of English (LLD 107), which must be completed with a grade of "B" or better in each.

Students admitted as conditionally classified may complete the requirements for classified standing after admission to the program; however, no more than twelve (12) units completed before the semester in which classified standing is attained may be counted towards the MA degree and 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.

Requirements for Admission to Candidacy

The requirements for admission to candidacy for the Master of Arts degree in Linguistics or TESOL are those established by the university and the department. For the MA - Linguistics this includes demonstrated proficiency in any language, including English, other than the native language. This requirement may be met by successful completion of the second year of college level courses (or their equivalent) of an Indo-European language or the first year of a non-Indo-European language. For the MA - TESOL this includes demonstrated proficiency in any language, including English, other than the native language. This requirement may be met by successful completion of the first year of college level courses (or their equivalent e.g., ACTFL opi level novice high) in a foreign language. For information see the Academic Requirements section of this catalog.

University English Competency Requirement

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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluation website at www.sjsu.edu/gape/index.htm.

MA - Linguistics

Requirements for the MA - Linguistics include those established by the department. For information concerning university requirements, see the Academic Requirements section of this catalog.

Students have the option of completing the MA - Linguistics under one of two plans:

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 LING 298, and must be approved by the student's advisor and thesis committee members. For Master's Thesis requirements please visit www.sjsu.edu/gradstudies/thesis/index.htm.

Plan B (without Thesis)

Completion of 30 units; passing of a comprehensive examination.

Students should consult with the advisor for elective course work selection.

	Semester Units
Core Courses LING 113, LING 114, LING 201, LING 202A, LING 203 and LING 213 (or equivalent)	18
Additional Courses	12
Plan A (with Thesis) LING 299 (6) and two electives (6)	12
Plan B (without Thesis) Four electives (12)	12
Total Units Required	30

MA - Teaching English to Speakers of Other Languages (TESOL)

For information concerning university requirements which are additional to the following requirements established by the department, see the Academic Requirements section of this catalog. The requirements for the MA - TESOL include those established by the department.

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 LING 298, and must be approved by the student's advisor and thesis committee members. For Master's Thesis requirements please visit www.sjsu.edu/gradstudies/thesis/index.htm.

Plan B (without Thesis)

Students are required to complete a total of 30 units (24 required; 6 electives); in addition, students must pass a comprehensive examination.

	Semester Units
Core Courses LLD 250W, LLD 260, LLD 261, LLD 270, LLD 271, LLD 280, LLD 282 and LLD 283	24
Additional Courses	6
Plan A (with Thesis) LLD 299	6
Plan B (without Thesis) Two electives	6
Emphasis in English for Specific Purposes (ESP) LLD 290 (3); LLD 291 or LLD 292 (3)	6
Total Units Required	30

Mathematics Department

College of Science

MacQuarrie Hall 308
408-924-5100
www.sjsu.edu/math/

Professors

Roger C. Alperin
Joanne Rossi Becker
Marilyn J. Blockus
Roger Dodd
Leslie V. Foster
Daniel A. Goldston
Bradley W. Jackson, Chair
Hidefumi Katsuura
Kenneth R. Kellum
Richard P. Kubelka
Ho Kuen Ng
Samih A. Obaid
Barbara J. Pence
Brian Peterson
Richard E. Pfiefer
Mohammad Saleem
Edward F. Schmeichel
Tatiana Shubin
Wasin So
Julie Sliva Spitzer
Maurice C. Stanley

Associate Professors

Trisha Bergthold
Maria Cayco-Gajic
Steven Crunk
Tim Hsu
Ferdinand Rivera
Cheryl Roddick
Slobodan Simic

Assistant Professors

Martina Bremer
Plamen Koev
Bee Leng Lee
Jared Maruskin

Curricula

BA, Mathematics

BA, Mathematics, Preparation for Teaching

BS, Applied Mathematics, Concentration in Applied and Computational Mathematics

BS, Applied Mathematics, Concentration in Statistics

BS, Applied Mathematics, Concentration in Economics and Actuarial Science

Minor, Mathematics

Minor, Mathematics, For K-8 Teachers

MA, Mathematics

MA, Mathematics, Concentration in Mathematics Education

MS, Mathematics

MS, Statistics

Introduction

Mathematics is one of the oldest intellectual disciplines. Yet, other disciplines continue to find new and exciting applications. The shape of our universe may turn out to have over ten dimensions and require an understanding of topology to describe. Bioinformatics is a new discipline combining biology, mathematics, and computer science which attempts to capitalize on the mapping of the human genome. Mathematics continues to play a role in cryptography, computer graphics, and operations research as well as in engineering and science.

The BA in Mathematics can prepare students for a variety of careers. The problem solving and communication skills acquired are generally valuable in business and industry. K-12 teachers of mathematics are always in demand. Graduates from our graduate program teach in the local community colleges.

The BS Applied Mathematics degree focuses on preparing students for more technical careers. Students who specialize in probability and statistics find positions related to actuarial science in the insurance industry and government. NASA-Ames and the aerospace industry have positions requiring backgrounds in applied mathematics and statistics.

A minor in mathematics is valuable to majors in science, engineering, business, and the social sciences as it provides important tools of research and understanding for these subject areas.

Most of our classes are taught by the full time faculty. Professors spend considerable time interacting with students outside of class.

Advisement

Mathematics majors are assigned to an advisor based on the degree they are pursuing. The list of advisors is available at the Mathematics Department Office in MacQuarrie Hall 308, along with other informational handouts. Advising and curricular information is also available at the Mathematics Department's website: www.sjsu.edu/math. Transfer students need to complete course equivalency forms with their advisor during the first semester in order to match prior college course work with stated major requirements. All students must meet with their advisors every semester at SJSU to obtain their advisor's signature on advising hold release forms. The advising hold needs to be removed to permit registration for classes the next semester.

Honors Program in Mathematics

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).

Center for Applied Mathematics, Computation and Statistics

The Center for Applied Mathematics, Computation and Statistics (CAMCOS) is a program designed to involve government and industry in providing students with practical experience that will make them more effective employees. After a sponsor provides a problem, a team is formed of students and a faculty supervisor to work on the problem. Students receive three units of credit through enrollment in Math 203 each semester they participate. Projects have been sponsored by Hewlett Packard, Lockheed, GTE, IBM, Intel, EPRI, NASA and other companies and research organizations.

Computing Facilities

The department maintains a computer laboratory for student use to support course work in the department. Students may use the computer lab either by registering for one unit of lab or by paying a semester fee. There is also a Macintosh lab serving classes for future K-12 teachers of mathematics. It is equipped with 30 Macintosh computers. All computers in the department are networked.

Restriction on Enrollment for Credit

Enrollment for credit in MATH 008, 010, 012, 070, 071, 101, 105, 106, 107A, and 107B will not be allowed for students who have received credit in MATH 019, 030, 031, 030P, 032, unless the particular course in question is required for the student's major, minor or credential requirements.

Calculus Placement Examination

Many students who wish to enroll in MATH 030, MATH 030P, MATH 060 or MATH 071 are required to take the Calculus Placement Examination. Information and forms are available in the Mathematics Department Office, MH 308, or online at the Mathematics Department website: www.sjsu.edu/math.

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 Mathematics Department, including support courses.

BA - Mathematics

The BA - Mathematics 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. The department also provides an excellent background for graduate work in mathematics and other disciplines including law and medicine as well as engineering and science.

33 upper division units of mathematics and computer science are required for this degree. If upper division requirements are satisfied using transferred lower division courses, then additional upper division math courses will need to be taken to obtain the required number of upper division units.

Semester Units

General Education Requirements 42
Of the 51 units required by the university, 9 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Support for the Major 11-15
Two semesters of calculus-based physics (or with prior approval, 6 units of upper division mathematics-related courses from other departments may be substituted) (6-8); MATH 050, MATH 109, MATH 167, CS 046A, CS 049C or CS 049J (2-4); MATH 100W (3)

Requirements in the Major 46-48

Lower Division 13-15
MATH 030 (3) or MATH 030P (3-5); MATH 031 (4); MATH 032 (3); MATH 042 (3)

Upper Division Core 18
MATH 108 (3); MATH 112, MATH 113, MATH 115 or MATH 138 (3); MATH 128A, MATH 129A and MATH 131A (9); MATH 128B, MATH 129B, MATH 131B or MATH 175 (3)

Additional Upper Division Requirements 15
Complete three courses from: MATH 104, MATH 109, MATH 112, MATH 113, MATH 115, MATH 126, MATH 128B, MATH 129B, MATH 131B, MATH 132, MATH 133A, MATH 133B, MATH 134, MATH 138, MATH 142, MATH 143C, MATH 143M, MATH 161A, MATH 161B, MATH 162, MATH 163, MATH 164, MATH 171, MATH 175, MATH 177, MATH 178, MATH 179, appropriate MATH 180, MATH 196 and MATH 203 courses (9); Two upper division mathematics or computer science courses, excluding MATH 101, MATH 105, MATH 106, MATH 107A, MATH 107B, MATH 110L, MATH 123, CS 110L (6)

Electives 13-19
MATH 180H (requires prior approval)

Total Units Required 120

BA - Mathematics, Preparation for Teaching

This major is designed for students interested in teaching mathematics in high school or middle school. The following course work satisfies San José State University's requirements for a BA in Mathematics. In addition, this program is approved by the California Commission on Teacher Credentialing (CCTC) as subject matter preparation for a single subject credential in mathematics.

Minimum grade point average (GPA) criteria is 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 index) for information on application and admission to credential programs.

33 upper division units of mathematics are required for this degree. If upper division requirements are satisfied using transferred lower division courses, then additional upper division math courses will need to be taken to obtain the required number of upper division units.

Semester Units

General Education Requirements 42
Of the 51 units required by the university, 9 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major and Supporting Courses 11-15
Two semesters of calculus-based physics (or with prior approval, 6 units of upper division mathematics-related courses from other departments may be substituted) (6-8); MATH 050, MATH 109, MATH 167, CS 046A, CS 049C or CS 049J (2-4); MATH 100W (3)

Requirements in the Major 46-48

Lower Division 13-15
MATH 030 (3) or MATH 030P (5); MATH 031 (4); MATH 032 (3); MATH 042 (3)

Upper Division 18
MATH 104, MATH 108, MATH 115, MATH 128A, MATH 129A and MATH 131A

Additional Requirements 15
MATH 161A and MATH 161B (6); MATH 126 or MATH 201B (3); MATH 128B, MATH 129B, MATH 131B or MATH 175 (3); MATH 133A, MATH 142, MATH 143C, MATH 143M, MATH 177 or MATH 178 (3)

Electives 13-19

Total Units Required 120

Note: MATH 201A is required in order to meet the subject matter requirement for a teaching credential.

BS - Applied Mathematics, Concentration in Applied and Computational Mathematics

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 mathematics 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.

30 upper division units of mathematics are required for this degree. If upper division requirements are fulfilled using transferred lower division courses, then additional upper division math courses will need to be taken to obtain the required number of upper division units.

Semester Units

General Education Requirements 42
Of the 51 units required by the university, 9 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Support for the Major 25
CS 046A and CS 046B (8); PHYS 050 and PHYS 051 (*) (8); MATH 100W (3); 6 additional upper division units from Math, CS, Science, or Engineering. All of these units can be in MATH 203 or similar applied mathematics projects. The choices must be approved by the Mathematics Department. (6)

Requirements for the Major 43-45

Lower Division Requirements 13-15
MATH 030 or MATH 030P (3-5); MATH 031, MATH 032 and MATH 042 (10)

Upper Division Requirements 30
MATH 112 (3); MATH 131A or MATH 132 (3); MATH 129A, MATH 133A, MATH 133B, MATH 138 and MATH 143C (15); MATH 129B, MATH 134 or MATH 143M (3); MATH 161A or MATH 163 (3); MATH 178 (3)

Electives 6-8

Total Units Required 120

*Appropriate courses from other Science or Engineering Departments may be substituted with Mathematics Department approval.

BS - Applied Mathematics, Concentration in Economics and Actuarial Science

This program is designed for students who want to become actuaries and for students who want a program that integrates business, economics, and mathematics. Actuaries are trained to analyze risk and are typically employed by insurance companies, banks, the government, and companies that handle retirement funds.

33 upper division units of mathematics are required for this degree. If upper division requirements are fulfilled using transferred lower division courses, then additional upper division math courses will need to be taken to obtain the required number of upper division units.

Semester Units

General Education Requirements 42
Of the 51 units required by the university, 9 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Support for the Major 22-24
ECON 001A, ECON 001B, ECON 101, ECON 102, BUS 190 and MATH 100W (20); Complete one course from: MATH 050, MATH 109, MATH 167, CS 046A, CS 049C, CS 049J (2-4)

Requirements in the Major 46-49

Lower Division Requirements 13-15
MATH 030 or MATH 030P (3-5); MATH 031, MATH 032 and MATH 042 (10)

Upper Division Requirements 24
MATH 129A, MATH 133A, MATH 143C, MATH 161A, MATH 161B, MATH 163 and MATH 178 (21); MATH 177 or ISE 170 (3)

Upper Division Electives 9-10
Complete nine to ten units from: BUS 170, BUS 172A, BUS 172B, ECON 103, ECON 104, ECON 106, ECON 138, ECON 139, ISE 167, MATH 131A, MATH 132

Electives 3-8

Total Units Required 120

BS - Applied Mathematics, Concentration in Statistics

This degree program is recommended for students who wish to pursue a career in statistics. This program also prepares a student for graduate study in probability and statistics.

The concentration in statistics is appropriate for students pursuing a career involving the collection and analysis of numerical data, the use of statistical techniques to predict population growth or economic conditions, the use of statistics to analyze medical, environmental, legal and social problems, or to help business managers make decisions and carry out quality control. The statistics concentration also provides a solid foundation for students who plan to become actuaries.

36 upper division units of mathematics are required for this degree. If upper division requirements are fulfilled using transferred lower division courses, then additional upper division math courses will need to be taken to obtain the required number of upper division units.

	Semester Units
General Education Requirements Of the 51 units required by the university, 6 may be satisfied by specified major and support requirements. Consult major advisor for details.	45
American Institutions Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.	(6)
Physical Education	2
Support for the Major MATH 100W (3); 8 units from Economics, Business, Science, or Engineering. The choices must be approved by the Mathematics Department. (8); 6 additional upper division units from Math, CS, Science, Engineering, Economics, or Business. All of these units can be in MATH 203 or similar applied mathematics projects. The choices must be approved by the Mathematics Department.	17
Requirements for the Major	49-51
Lower Division Requirements MATH 030 or MATH 030P (3-5); MATH 031, MATH 032 and MATH 042 (10)	13-15
Upper Division Requirements MATH 129A, MATH 161A, MATH 161B, MATH 163, MATH 164 and MATH 167 (18); Complete eighteen units from: MATH 112, MATH 131A or MATH 132, MATH 142, MATH 143C, MATH 143M, MATH 162, MATH 178, MATH 261A, MATH 261B, MATH 265, MATH 266 (18)	36
Electives	5-7
Total Units Required	120

Minor - Mathematics

	Semester Units
Lower Division MATH 030 or MATH 030P (3-5); MATH 031 (4)	7-9
Upper Division Mathematics Electives	9
Upper or Lower Division Mathematics Electives	0-2
Total Units Required	18

MATH 101, MATH 105, MATH 106, MATH 107A, MATH 107B and MATH 110L may not be included in the minor. MATH 123 can only be included in the minor if neither MATH 129A nor MATH 133A is included in the minor. At least three units of upper division must be completed at SJSU.

Minor - Mathematics, For K-8 Teachers

	Semester Units
MATH 012, MATH 101, MATH 105, MATH 106, MATH 107A and MATH 107B	
Total Units Required	18

A minimum of three units of upper division must be completed at SJSU.

MS - Mathematics

This degree is the recommended degree for future community college teachers. It is also the appropriate degree for students who seek to deepen their knowledge of mathematics for work in the research and development area of industry or who plan to continue toward the PhD.

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; have completed 24 semester units of upper-division mathematics with a grade point average of at least 3.0; and have 1-3 letters of recommendation submitted on his or her behalf. The course work must be acceptable toward a bachelor's degree in mathematics and may not be counted toward the MS degree.

Requirements for Admission to Conditionally Classified Standing

A student who meets the minimum requirements for admission to the Graduate Division but does not satisfy the mathematics course work requirements stated above may be admitted as conditionally classified with as few as 15 semester units of upper-division mathematics. After arrival at SJSU, the student must complete additional course work to make up the deficiency in order to obtain classified status.

Requirements for Admission to Candidacy for the MS - Mathematics

To be admitted to candidacy for the MS degree, a student must meet the all-university admission requirements as stated in this catalog. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations (GAPE) website at www.sjsu.edu/gape. Students must satisfy the following Mathematics Department requirements:

1. The student, with the assistance of the Graduate Coordinator, finds a Department faculty member willing to serve as a thesis or writing project director. With that director's help, the student chooses a topic for the thesis or writing project.

2. The student must pass a Qualifying Examination--oral or written at the student's election--that covers material generally relevant to the area of the proposed thesis or writing project. Specific details about the material to be covered will be determined in consultation with the three-person committee of faculty members who will examine the student. Note: students must pass this Qualifying Examination before they may begin formal work on a thesis or writing project.

3. The student must complete the Petition for Advancement to Graduate Candidacy form. This form lists, among other things all the course work to be counted toward the master's degree. After the form has been signed by the student's thesis or writing project director and the Graduate Coordinator, it is forwarded to the Associate Vice President for Graduate Studies and Research for final approval. Any subsequent changes to the student's program require approval from GAPE.

Completing Requirements for the MS - Mathematics

Plan A (with Thesis)

As noted above, the student must choose a thesis director, who then becomes his or her advisor. A committee consisting of the director and two professors selected by the director, with the approval of the Graduate Curriculum Committee, must approve the thesis topic before work begins. The topic must be in the field of mathematics (not in the field of mathematics education). The student must register for MATH 299 typically in the semester in which he or she expects to complete the thesis. Upon completion of the thesis, the student must give a public presentation on the thesis, which is followed by an oral examination (thesis defense) conducted by the thesis committee.

Plan B (with Writing Project)

Plan B differs from Plan A only in the following respect: MATH 299, Thesis, is replaced by MATH 298, Special Study. The student must write a formal paper, substantially similar, in form and content, to a thesis.

The procedure and requirements for this paper will be the same as for a thesis except that the paper will not be filed with the Associate Vice President for Graduate Studies and Research. A bound copy must be filed with the department. As with a thesis, upon completion of the writing project, the student must give a public presentation on the project; the presentation is followed by an oral examination (defense) conducted by the writing project committee.

Electives

The elective units may include a maximum of 3 units of MATH 180 and/or MATH 298. They must be in 100- or 200-level courses from the Mathematics Department, except in the following circumstances: a student who has completed 24 units of upper division mathematics courses (acceptable toward a BA - Mathematics) before beginning his or her master's program may take a maximum of 6 units (related to mathematics and with prior department approval) outside the field of mathematics. See restrictions. Education courses applied toward the single subject credential may not be applied toward the degree. MATH 101, MATH 105, MATH 106, MATH 107A, MATH 107B, MATH 123, MATH 133A, MATH 201A and MATH 201B are also not applicable toward the M.S. degree.

	Semester Units
Required 200-Level Courses in Mathematics	18
Must include a one-year sequence.</cstyle:> Complete eighteen units from: MATH 211A, MATH 211B, MATH 213A, MATH 213B, MATH 221A, MATH 221B, MATH 226, MATH 229, MATH 231A, MATH 231B, MATH 233A, MATH 233B, MATH 234, MATH 235, MATH 238, MATH 243A, MATH 243B, MATH 261A, MATH 261B, MATH 265, MATH 266, MATH 271A, MATH 271B, MATH 275, MATH 279A, MATH 279B, MATH 285	
Electives	9
Thesis or Writing Project MATH 299 (Plan A) or MATH 298 (Plan B)	3
Total Units Required	30

MA - Mathematics

This degree is recommended for students who seek greater depth and breadth in their knowledge of mathematics. It is appropriate for mathematics teachers at the secondary level. It also enhances general communication, problem solving and critical thinking skills which are generally in demand in industry.

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; have completed 18 semester units of upper-division mathematics with a grade point average of at least 3.0; and have 1-3 letters of recommendation submitted on his or her behalf. The course work must be acceptable toward a bachelor's degree in mathematics and may not be counted toward the MA degree.

Requirements for Admission to Conditionally Classified Standing

A student who meets the minimum requirements for admission to the Graduate Division but does not satisfy the mathematics course work requirements stated above may be admitted as conditionally classified with as few as 12 semester units of upper-division mathematics. After arrival at SJSU, the student must complete additional course work to make up the deficiency in order to obtain classified status.

Requirements for Admission to Candidacy for the MA - Mathematics

To be admitted to candidacy for the MA degree, a student must meet the all-university admission requirements as stated in this catalog. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape. Students must satisfy the following Mathematics Department requirements:

1. The student, with the assistance of the Graduate Coordinator, finds a Department faculty member willing to serve as a thesis or writing project director. With that director's help, the student chooses a topic for the thesis or writing project.

2. The student must pass a Qualifying Examination--oral or written at the student's election--that covers material generally relevant to the area of the proposed thesis or writing project. Specific details about the material to be covered will be determined in consultation with the three-person committee of faculty members who will examine the student. Note: students must pass this Qualifying Examination before they may begin formal work on a thesis or writing project.

3. The student must complete the Petition for Advancement to Graduate Candidacy form. This form lists, among other things all the course work to be counted toward the master's degree. After the form has been signed by the student's thesis or writing project director and the Graduate Coordinator, it is forwarded to the Associate Vice President for Graduate Studies and Research for final approval. Any subsequent changes to the student's program require approval from GAPE.

Completing Requirements for the MA - Mathematics

Plan A (with Thesis)

As noted above, the student must choose a thesis director, who then becomes his or her advisor. A committee consisting of the director and two professors selected by the director, with the approval of the Graduate Curriculum Committee, must approve the thesis topic before work begins. The topic must be in the field of mathematics (not in the field of mathematics education). The student must register for MATH 299 typically in the semester in which he or she expects to complete the thesis. Upon completion of the thesis, the student must give a public presentation on the thesis, which is followed by an oral examination (thesis defense) conducted by the thesis committee.

Plan B (with Writing Project)

Plan B differs from Plan A only in the following respect: Math 299, Thesis, is replaced by MATH 298, Special Study. The student must write a formal paper, substantially similar, in form and content, to a thesis.

The procedure and requirements for this paper will be the same as for a thesis except that the paper will not be filed with the Associate Vice President for Graduate Studies and Research. A bound copy must be filed with the department. As with a thesis, upon completion of the writing project, the student must give a public presentation on the project; the presentation is followed by an oral examination (defense) conducted by the writing project committee.

Electives

The elective units may include a maximum of 3 units of MATH 180 and/or MATH 298. They must be in 100- or 200-level courses from the Mathematics Department, except in the following circumstances: a student who has completed 24 units of upper division mathematics courses (acceptable toward a BA - Mathematics) before beginning his or her master's program may take a maximum of 6 units (related to mathematics and with prior department approval) outside the field of mathematics. See restrictions. Education courses applied toward the single subject credential may not be applied toward the degree. MATH 101, MATH 105, MATH 106, MATH 107A, MATH 107B and MATH 123 are also not applicable toward the MA degree.

Degree Requirements for the MA - Mathematics

Semester Units

Required 200-Level Courses in Mathematics 12

Complete twelve units from the following, including a one-year sequence.</ cstyle:>

Complete twelve units from: MATH 211A, MATH 211B, MATH 213A, MATH 213B, MATH 221A, MATH 221B, MATH 226, MATH 229, MATH 231A, MATH 231B, MATH 233A, MATH 233B, MATH 234, MATH 235, MATH 238, MATH 243A, MATH 243B, MATH 261A, MATH 261B, MATH 265, MATH 266, MATH 271A, MATH 271B, MATH 275, MATH 279A, MATH 279B, MATH 285

Electives 15

Thesis or Writing Project 3

MATH 299 (Plan A) or MATH 298 (Plan B)

Total Units Required 30

MA - Mathematics, Concentration in Mathematics Education

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 Admission 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 MATH 201A, MATH 201B, and 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

Semester Units

Required 200-Level Courses in Mathematics 21

MATH 201A, MATH 201B and MTED 209 (9); Complete twelve units from: MATH 211A, MATH 211B, MATH 213A, MATH 213B, MATH 221A, MATH 221B, MATH 226, MATH 229, MATH 231A, MATH 231B, MATH 233A, MATH 233B, MATH 234, MATH 235, MATH 238, MATH 243A, MATH 243B, MATH 261A, MATH 261B, MATH 265, MATH 266, MATH 271A, MATH 271B, MATH 275, MATH 279A, MATH 279B, MATH 285 (including a one-year sequence) (12)

Electives 6

100-200 level mathematics courses not to include MATH 101, MATH 105, MATH 106, MATH 107A, MATH 107B, MATH 110L or MATH 123

Thesis or Writing Project 3

MATH 299 (Plan A) or MATH 298 (Plan B)

Total Units Required 30

MS - Statistics

This degree is recommended for students interested in a career as a statistician or students interested in other occupations, which require the use and understanding of statistical methods. The degree will prepare students for a variety of careers where they will apply statistics in business, government, or industry. Most jobs as a statistician require a master's degree. The MS in Statistics will allow students who have received a bachelor's degree with an adequate mathematical and statistical background to acquire the knowledge of statistical methods necessary to apply statistics to problems in their chosen fields.

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; have completed a calculus series through multiple integration and partial differentiation (as might be completed at SJSU through having taken MATH 30, 31 and 32); have completed a course in linear algebra equivalent to MATH 129A at SJSU; and have completed a course in introductory calculus-based probability and statistics equivalent to MATH 161A at SJSU. The applicant must have achieved at least a grade of B in each of these courses. This coursework may not be counted toward the MS degree. The applicant must have two letters of recommendation submitted on his or her behalf directly to the Statistics Coordinator, Mathematics Department. For general information on graduate admission and requirements at SJSU please see www.sjsu.edu/gape.

Requirements for Admission to Conditionally Classified Standing

An applicant who meets the minimum requirements for admission to the Graduate Division but does not satisfy the mathematics and statistics coursework requirements stated above may be admitted as Conditionally Classified. After arrival at SJSU, the student must complete additional coursework to make up the deficiency in order to obtain classified status.

Requirements for Admission to Candidacy for the MS - Statistics

To be admitted to candidacy for the MS degree, a student must meet the all-university-candidacy requirements as stated in this catalog. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape. In addition to the all-university requirements for candidacy, students must satisfy the following Mathematics Department requirements:

1. Complete MATH 163 and 164, each with a grade of at least B.

2. Complete at least 18 units towards the degree with at least a 3.0 average.

3. Select, with the help of the Graduate Coordinator, a thesis or writing project director. And, with that director's help, choose a topic for the thesis or writing project.

4. 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 student's thesis or writing project director and the Graduate Coordinator, it is forwarded to the Associate Vice President for Graduate Studies and Research for final approval. Any subsequent changes to the student's program require approval from Graduate Studies.

Completing Requirements for the MS - Statistics

Plan A (with Thesis)

As noted above, the student must choose a thesis director, who then becomes his or her advisor. A committee consisting of the director and two professors selected by the director, with the approval of the Statistics Curriculum Committee, must approve the thesis topic before work begins. The student must register for MATH 299 - typically in the semester in which he or she expects to complete the thesis. Upon completion of the thesis, the student must give a public presentation on the thesis, which is followed by an oral examination (thesis defense) conducted by the thesis committee. The thesis must be approved by the Office of Graduate Studies and Research and filed with the office of the Associate Vice President for Graduate Studies and Research.

Plan B (with Writing Project)

Plan B differs from Plan A only in the following respects: MATH 299, Thesis, is replaced by MATH 298, Special Study. The student must write a formal paper, substantially similar, in form and content, to a thesis. The procedure and requirements for this paper will be the same as for a thesis except that the paper need not be approved by the Office of Graduate Studies and Research and will not be filed with the Associate Vice President for Graduate Studies and Research. A bound copy must be filed with the department. As with a thesis, upon completion of the writing project, the student must give a public presentation on the project; the presentation is followed by an oral examination (defense) conducted by the writing project committee.

Electives

All electives must be pre-approved by the Statistics Coordinator. The elective units may include a maximum of 3 units of MATH 180 and/or MATH 298 (not including writing project) and a maximum of three units of MATH 203 beyond those required for the degree. The electives should form a coherent set of courses associated with the student's career goals.

	Semester Units
Required Courses MATH 163, MATH 164, MATH 167, MATH 203, MATH 261A, MATH 261B, MATH 267 and MATH 269	24
Approved Elective Courses Please consult major advisor for details.	9
Thesis or Writing Project MATH 299 (Plan A) or MATH 298 (Plan B)	3
Total Units Required	36

Mechanical and Aerospace Engineering Department

College of Engineering

Engineering Building 310
408-924-3850

Professors

Raghu B. Agarwal, Graduate Coordinator
Fred Barez
Burford J. Furman
Tai-Ran Hsu
Nikos J. Mourtos
Periklis Papadopaulos
Ji Ching Wang
Raymond K. Yee, Associate Chair

Associate Professors

Winncy Y. Du
John Lee
Nicole Okamoto
Jinny Rhee

Curricula

BS, Mechanical Engineering
BS, Aerospace Engineering
MS, Mechanical Engineering
MS, Aerospace Engineering

Introduction

Mission Statement for the Department of Mechanical and Aerospace Engineering

The mission of the Mechanical and Aerospace Engineering Department at San José State University is to serve society, the public sector, and private industry by:

- Providing undergraduate and graduate Mechanical and Aerospace Engineering education that prepares students with the knowledge, modern applications and lifelong learning skills required to serve the engineering profession and industry
- Contributing to the development and application of knowledge through faculty scholarship
- Preparing students for the modern professional-practice environment.

Relevance of MAE Department Educational Objectives to Institutional Mission Statements:

We believe that the educational objectives presented above support the mission statements of both the College of Engineering and the University. For example, Item 1) will provide our students with necessary knowledge and skills for applying them in the service of our society, and Items 2) to 4) will allow our students to expand the base of knowledge through research and scholarship. The content in Items 1), 4) will provide our students with an excellent chance of success in their professional practice in their chosen fields.

Students in the Mechanical and Aerospace Engineering Department may pursue undergraduate or graduate degrees in either discipline.

All College of Engineering undergraduate majors are required to maintain a Major GPA of 2.0 or above. Major GPA includes all courses required for the major, including math, science and engineering.

Mechanical Engineering

The undergraduate curriculum is designed to educate students in mechanical engineering theory and practice. By proper choice of electives, under the guidance of a departmental academic advisor, the student can prepare for professional work in mechanical engineering with a focus in one or more of the following areas: mechanical design, mechatronics, and thermal fluids. The curriculum is based on a strong core of engineering science courses common to all engineering curricula and includes courses with hands-on laboratory components and design projects. The BS ME program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

Educational Objectives

Within a few years of graduation, our graduates are expected to:

- 1. Apply engineering knowledge and skills to make positive impact on society through employment in industry, advanced study, and/or public service;
- 2. Communicate effectively and perform professionally in both individual and multi-disciplinary team-based project environment;
- 3. Be engaged in and continue to engage in lifelong self-directed learning to maintain and enhance their professional skills;
- 4. Determine and respond to ethical implications on issues such as public safety and intellectual property protection, and also reflect on global and societal impacts of engineering solutions to contemporary problems.

The MS program for advanced study in mechanical engineering is designed to develop the high degree of competency, both in theory and in practice, required by the advancing technology of the nation, and allows concentrated efforts in the areas of mechanical design, thermal fluid systems, and mechatronics. Late afternoon and early evening courses of specific interest to practicing engineers wishing to do graduate work are offered.

Each student majoring in mechanical engineering is expected to maintain close contact with the department academic advisor and to obtain the advisor's approval of and signature on all required registration forms. Failure to plan a program carefully may result in delays in graduation.

See the Engineering Preparation and Common Area Requirements below for details common to all engineering curricula.

Aerospace Engineering

The undergraduate curriculum provides students with a broad understanding of basic concepts, as well as the contemporary skills required by industry. The course work includes extensive laboratory experiences and many opportunities for students to work on hands-on, design projects. The foundation courses provide a basis for professional competence and the required knowledge to focus on a particular specialization upon graduation, in the work environment or in graduate school. Students specialize in one or more of the following fields: aircraft or spacecraft design, structures and materials, guidance and control, aerodynamics and propulsion. Emphasis is placed on both analysis and design. Students are prepared for professional careers in several fields of aerospace engineering involving aeronautical and space systems research, design, development, testing, and systems integration. The BS AE program is accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org.

Educational Objectives

Within a few years of graduation, BS graduates of the Aerospace Engineering Program are expected to:

- 1. Hold positions of technical responsibility, as members or leaders of multi-disciplinary teams engaged in engineering problem solving, modeling, systems analysis, design, testing or research.
- 2. Have enhanced and continue to enhance their professional skills by pursuing / completing a graduate degree or other post-graduate training.
- 3. Be well rounded in their understanding of multicultural and global perspectives and work effectively with engineers and customers from around the world, while providing for issues such as public safety, concern for the environment, and respect for intellectual property.

Major facilities include a subsonic wind tunnel, a water tunnel for flow visualization, a shock tunnel for supersonic/hypersonic testing and modern dedicated computer workstations and microcomputers.

See Engineering Preparation and Common Area Requirements section for details common to all engineering curricula.

BS - Mechanical Engineering

Semester Units

General Education Requirements 30
Of the 51 units required by the university, 21 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 30-32
MATH 030, MATH 031, MATH 032 and MATH 133A (13); PHYS 070, PHYS 071 and PHYS 072 (12); CHEM 001A (5)

Required for the Major 60

Engineering Common Area 31
CE 099, CE 112, EE 098, ENGR 010, ENGR 100W, MATE 025, ME 020, ME 030, ME 101, ME 111 and ME 113

Required Courses in Engineering 26
ME 041, ME 106, ME 114, ME 115, ME 120, ME 130, ME 147, ME 154, ME 195A and ME 195B

Required Capstone Course 3
ME 157, ME 182 or ME 190

Additional Major Courses 10-12
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 134

*Applies to those students not taking American Studies and the Physics 070 series.

Note: PHYS 050, PHYS 051, PHYS 052 and PHYS 053 may be taken in place of PHYS 070, PHYS 071 and PHYS 072.

To qualify for a baccalaureate degree in Mechanical Engineering, a student must receive a grade of "C-" or better in courses required for the major. Students must earn a cumulative GPA of at least "C" (2.0) in each one of the following categories: all college work (overall average), all units attempted at SJSU, all units in the major, and all units in any minors.

A semester-by-semester schedule for meeting these requirements is available in the department office.

BS - Aerospace Engineering

Semester Units

General Education Requirements 30
Of the 51 units required by the university, 21 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 33
MATH 030, MATH 031, MATH 032, MATH 129A and MATH 133A (16); PHYS 070, PHYS 071 and PHYS 072 (12); CHEM 001A (5)

Required for the Major 63

Engineering Common Area 28
ENGR 010, ENGR 100W, CE 099, CE 112, EE 098, MATE 025, ME 020, ME 030, ME 101 and ME 113

Required Courses 29
AE 114, AE 140, AE 160, AE 162, AE 164, AE 165, AE 167, AE 168, AE 169 and ME 120

Required Capstone Course 6
AE 171A and AE 171B (6) or AE 172A and AE 172B (6)

Additional Major Courses 6
Technical electives can be chosen from a list of designated courses in one of the two areas: Aircraft Design or Space Transportation and Exploration.

Total Units Required 134

*Applies to those students not taking American Studies and the Physics 070 series.

Note: PHYS 050, PHYS 051, PHYS 052 and PHYS 053 may be taken in place of PHYS 070, PHYS 071 and PHYS 072.

To qualify for a baccalaureate degree in Aerospace Engineering, a student must receive a grade of a grade of "C-" or better in all courses required for the major. Students must earn a cumulative GPA of at least "C" (2.0) in each one of the following categories: all college work (overall average), all units attempted at SJSU, all units in the major, and all units in any minors.

A semester-by-semester schedule for meeting these requirements is available in the department office.

MS - Mechanical Engineering

The Mechanical Engineering Graduate Program is designed to afford ample opportunity for working engineers to continue their education. Courses and scholarly activities in such areas as fluid dynamics, thermodynamics, heat transfer, rigid-body dynamics, vibrations, modal analysis, 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).

Educational Objectives for Graduate Program

- 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.
- 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 possible specialization in areas such as: Energy Systems, Electronics Cooling, Electronics Packaging & Reliability, Finite Element Analysis & CAD, Mechatronics & MEMS, Product Design, Robotics, Automation & Manufacturing.
- 4. Strong verbal and written communication skills, including the ability to read, write and comprehend technical documents.
- 5. Think and work independently to perform design and in-depth analysis in solving open-ended mechanical engineering problems.

General Admission Requirements

Students desiring to pursue a Master of Science degree in Mechanical Engineering must satisfy each of the following requirements:

1. Must hold 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 Studies Committee of the department.

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. Student from non-ABET accredited Mechanical Engineering programs must have obtained a minimum score of 1100 in quantitative and verbal and a minimum score of 3.5 in Analytical Writing on the Graduate Record Examination (GRE). Scores for each section must also be 400 or greater.

4. Students from non-English speaking countries must achieve a minimum TOEFL score of 550. This requirements if waived if the language of instruction in the home country is documented to be in English.

Requirements for Admission to Conditionally Classified Standing

Students whose records show certain deficiencies, such as GPA and/or Non-ME undergraduate major, etc., may be admitted to conditionally classified standing. They may later initiate petitions to be given classified standing in the program when such deficiencies have been removed and their records show promise of success in the degree program.

Candidacy for MS - Mechanical Engineering

Prior to registering for the first time (or upon reentering), a student should consult with the Mechanical Engineering Program Advisor. A schedule of courses will be developed at this time. Students admitted as conditional must satisfy the requirements listed on their letter of acceptance and then apply to the Graduate Studies Office for the change of classification. Students who have completed matriculation and received classified standing in a master's degree curriculum must next be admitted to candidacy for the degree. A student may be admitted to candidacy after completing a minimum of nine units of graded work as a graduate student in 100- or 200-level courses which are acceptable to the department in which the degree is sought.

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 count as part of the master's degree program requirements.

Requirements for MS - Mechanical Engineering

The department offers courses designed to provide mechanical engineers with advanced level of knowledge and skills in three areas of specialization: mechanical design; thermal/fluids; and controls and manufacturing. The program consists of thirty (30) semester units of approved work, with at least eighteen (18) of which must be 200-level courses in mechanical engineering. The student has the choice of Plan A (thesis) or Plan B (project).

All students are recommended to concentrate their studies in one of the areas of specialization, with the graduate coordinator's approval. Each area of specialization requires:

- 6 units of **required** courses for the degree.
- 12 units of **suggested** courses for the specialization area.
- 6 units of electives **recommended** for the area but subjected to approval by the Graduate Coordinator, the student may take up to 6 units of course work from the undergraduate program of the Department, or graduate courses from other departments, colleges/universities, or open university units. Students are allowed and encouraged to take up to 6 units of graduate course work from other related Science and Engineering programs.
- 6 units of **Project/Thesis**.

With Plan A, six (6) units of thesis credits, ME 299, may be applied. With Plan B, six (6) units of ME 295 are required. Both Plan A and Plan B require an open examination (oral defense) to be conducted by the student's thesis committee.

Both the university GPA and the Department GPA must be at least 3.0. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluation at www.sjsu.edu/gape.

Required Courses for MS - Mechanical Engineering

	Semester Units
Program Core Course ME 230 (3) and ME 270 or ME 273 (3)	6
Suggested Courses for the Area of Specialization See the Program Advisor or Department handout for the list of 200-level Mechanical Engineering courses.	12
Elective Courses Elective courses need to be planned in consultation with the Program Advisor.	6
Thesis or Project ME 299 (Thesis) (6) or ME 295A and ME 295B (Project) (6)	6
Total Units Required	30

At the completion of the program of study, the student must have achieved a minimum grade point average of 3.0 to graduate.

MS - Aerospace Engineering

The Aerospace Engineering Graduate Program provides students with an advanced education in aerospace engineering theory and practice. It is designed to prepare students for professional careers in several fields of aerospace engineering involving aircraft, space systems, space transportation and exploration, research, design, development, testing, and systems integration.

Educational Objectives for Graduate Program

- 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.
- 2. Contemporary professional and lifelong learning skills to be able to apply theory to solve practical engineering problems.
- 3. Expertise necessary to work in the analysis and design of aerospace engineering systems with possible specialization in areas such as: Aircraft Design, Spacecraft Systems, Space Transportation & Exploration.
- 4. Strong verbal and written communication skills, including the ability to write engineering reports.
- 5. The ability to perform research and work independently to solve open-ended problems in aerospace engineering.

General Admissions Requirements

Students desiring to pursue a Master of Science degree in Aerospace Engineering must satisfy each of the following requirements:

1. Must hold a Bachelor of Science 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 Studies Committee of the department.

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. Student from non-ABET accredited Aerospace Engineering programs must have obtained a minimum score of 1100 in quantitative and verbal and a minimum score of 3.5 in Analytical Writing on the Graduate Record Examination (GRE).

4. Students from non-English speaking countries must achieve a minimum TOEFL score of 550. This requirements if waived if the language of instruction in the home country is documented to be in English.

Requirements for Admission to Conditionally Classified Standing

Students whose records show certain deficiencies, such as GPA and/or Non-ME undergraduate major, etc., may be admitted to conditionally classified standing. They may later initiate petitions to be given classified standing in the program when such deficiencies have been removed and their records show promise of success in the degree program.

Candidacy for MS - Aerospace Engineering

Prior to registering for the first time, (or upon reentering), a student should consult with the Aerospace Engineering Program Advisor. A schedule of courses will be developed at this time. Students admitted as conditional must satisfy the requirements listed in their letter of acceptance and then apply to the Graduate Studies Office for a change of classification. Students who have completed matriculation and received classified standing in the master's degree curriculum must next be admitted to candidacy for the degree. A student may be admitted to candidacy after completing a minimum of nine units of graded work as a graduate student in 100-or 200- level courses which are acceptable to the department in which the degree is sought.

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 count as part of the master's degree program requirements.

Requirements for MS - Aerospace Engineering

The department offers courses designed to provide a flexible curriculum structure that allows students to follow a program of study to meet their individual career goals. As shown below, the program consists of 30 semester units of approved work including six units devoted to a thesis or project. In addition to two required core courses, the student selects 18 units of elective courses with the guidance of his or her advisor. The student has the choice of Plan A (Thesis) or Plan B (Project).

All students are recommended to concentrate their studies in one of the areas of specialization, with the graduate coordinator's approval. Each area of specialization required:

- 6 units of **required** courses for the degree.
- 12 units of **suggested** courses for the specialization area.
- 6 units of electives **recommended** for the area but subjected to approval by the Graduate Coordinator, the student may take up to 6 units of course work from the undergraduate program of the Department, or graduate courses from other departments, colleges/universities, or open university units. Students are allowed and encouraged to take up to 6 units of graduate course work from other related Science and Engineering programs.
- 6 units of **Project/Thesis**.

With Plan A, six (6) units of thesis credits, AE 299, may be applied. With Plan B, six (6) units of AE 295 are required. Both Plan A and Plan B require an open examination (oral defense) to be conducted by the student's thesis committee.

Both the university GPA and Department GPA must be at least 3.0.

Required courses for MS - Aerospace Engineering

	Semester Units
Core Courses AE 262, AE 264, AE 267, AE 269 and ME 230	15
Suggested Course for the Area of Specialization One (1) required elective based on focus area as follows: Aircraft Design: required: AE 271 (3); Space Transportation and Exploration: required: AE 210 (3)	3
Elective Courses Elective courses need to be planned in consultation with the Program Advisor.	6
Thesis or Project AE 299 (Thesis) (6) or AE 295A and AE 295B (Project) (6)	6
Total Units Required	30

Electives will typically involve a mix of mechanical and aerospace engineering classes as well as courses from other engineering departments and from physics, chemistry, mathematics, and computer science.

Upon completion of the degree requirements, the student must have achieved a minimum grade point average of 3.0 in order to graduate.

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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape.

In selecting a thesis or project topic, the student first identifies a faculty member in their 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. The student consults with and selects his or her advisor during the first semester of graduate study.

At the completion of the program of study, the student must have achieved a minimum grade point average of 3.0 to graduate.

Meteorology and Climate Science Department

College of Science

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Professors

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Curricula

BS, Meteorology
BS, Meteorology, Concentration in Climate Science
Minor, Atmospheric and Seismic Hazards
Minor, Climate Change Strategies
Minor, Meteorology
MS, Meteorology

Introduction

Introduction

Meteorology is the study of the atmosphere and its phenomena, including day-to-day weather. **Climate Science** is the study of Earth's climate and its evolution over time. Both are integrated physical sciences, with ties to physics, mathematics, chemistry, computer science, and even biological science in the case of global climate change studies. In today's world, we are working to develop a better understanding of the interconnectedness of various parts of our environment, and knowledge of the role of the atmosphere is critical in these studies. This is true in the short term (Meteorology) and over longer time scales (Climate Science). The Department of Meteorology and Climate Science is dedicated to providing this knowledge by preparing students to measure, analyze, model and predict the state of the atmosphere into the next week, and into the next century. This preparation is accomplished through curricula for both the BS and the MS degrees which feature both theoretical and applied courses.

BS in Meteorology

For the traditional BS in Meteorology, theoretical courses in atmospheric hydrodynamics and atmospheric physics are balanced by hands-on laboratory work involving: atmospheric measurements and instruments; weather analysis and forecasting; meteorological programming; remote sensing; and statistical climatology. BS students also learn techniques of verbal, written, and electronic communication which are discipline-specific. The BS Meteorology program includes a practical senior thesis project that introduces the student to scientific research and its written and oral presentation. Completion of the BS Meteorology degree presents many employment opportunities, including: Weather Forecaster; Air Pollution Specialist; Environmental Programmer; Environmental Consultant; Middle and High School Science Teacher; Media Specialist; Graduate School.

BS in Meteorology, Concentraiton in Climate Science

For the BS Meteorology, concentration in Climate Science (first offered in Fall 2010), students will study the science of climate and of climate change. These courses will be balanced by courses in other fields that cover a wide range of issues related to climate change, including: energy; water resources; food production and agriculture; policy. All BS students also learn techniques of verbal, written, and electronic communication that are discipline-specific. The BS Meteorology, concentration in Climate Science culminates with a course in which students will propose and investigate mitigation and other strategies related to climate change. Completion of this degree presents employment opportunities in all emerging fields related to climate change. This includes jobs in both government and the private section related to: climate change issues on local regional, national, and global scales; resource management including water, energy, and carbon.

MS in Meteorology

The MS degree prepares the student for higher-level professional responsibility, independent research, and continued graduate work in atmospheric science. Graduate level theoretical and applied meteorology courses, together with a substantial research project, lead to the preparation of the master's thesis, which is the culmination of the MS course of study.

General

In addition to the formal BS and MS curricula, there are many other opportunities to make contacts with prospective employers via professional seminars sponsored by the department and by the Student Chapter of the American Meteorological Society (SCAMS). Opportunities also arise for related work experience for students at both the BS and MS levels. These include assistantships in departmental research programs, and internships at local companies and in government laboratories. Most internships and research assistantships require the completion of some course work in the department, or prior experience with computers and/or in meteorology. Details are available through the department office.

The faculty has a wide range of expertise, including aerosol physics, urban meteorology and pollution, meteorological modeling and measurements, satellite meteorology, aviation meteorology, atmospheric hydrodynamics, weather analysis and prediction, atmospheres of other planets, global climatic change, and meteorological data acquisition, processing and display. Although one of the smaller departments in the university, the Meteorology Department is one of the most active departments in research, providing students at all levels with opportunities for a variety of research experiences and financial support.

Department alumni include top scientists and forecasters in the National Atmospheric and Oceanographic Administration, the United States Air Force, the United States Navy, NASA, various state and federal air pollution agencies, the aerospace industry, and aviation operations. Our alumni also include university faculty members, 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. Recent graduates are pursuing advanced degrees at institutions including UCLA, Harvard, and the University of Washington.

Advising

Each student majoring in Meteorology (including the Climate Science concentration) must meet with their academic advisor at least once a semester. More frequent contacts are encouraged, especially prior to the first semester at SJSU. Formal approval of each student's academic program must be obtained from the advisor each semester, prior to registration. Failure to plan a program carefully can result in delays to graduation.

BS - Meteorology

The BS Meteorology degree program 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.

Semester Units

General Education Requirements 39
Of the 51 units required by the university, 12 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Requirements for the Major 51
METR 010, METR 040, METR 050, METR 051, METR 060, METR 061, METR 100W, METR 121A, METR 121B, METR 125, METR 136, METR 155, METR 163, METR 166, METR 170A, METR 170B, METR 171A, METR 171B and METR 172 (49); METR 179 (2)

Supporting Courses Required 27
CHEM 001A (5); MATH 030, MATH 031 and MATH 032 (10); PHYS 050, PHYS 051 and PHYS 052 (12)

Electives 6
Complete six units from: METR 123, METR 130, METR 131, METR 135, METR 150, METR 160, METR 164, METR 165, METR 173, METR 174, METR 185

Total Units Required 125

A minimum grade of "C-" must be attained in all major and supporting courses.

BS - Meteorology, Concentration in Climate Science

The BS Meteorology, concentration in Climate Science program 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 will be ready to enter graduate programs in the atmospheric/climate sciences.

Semester Units

General Education Requirements 36
Of the 51 units required by the university, 15 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 21
MATH 030, PHYS 002A, PHYS 002B, CHEM 001A and BIOL 001A

Requirements for the Major 53
ENVS 001, GEOL 003, METR 012, METR 040, METR 050, METR 051, METR 060 and METR 071 (19); METR 100W, METR 123, METR 135, METR 136, METR 163, METR 173 and METR 174 (21); COMM 146F, ENVS 119, ENVS 133 and ISE 103 (13)

Major Electives 8
Complete eight units from: ENVS 107, ENVS 116, ENVS 124, ENVS 128, ENVS 130, ENVS 132, GEOG 120, GEOG 124, GEOG 130, GEOG 170, GEOG 171, GEOG 181, GEOG 182, METR 131

Total Units Required 120

*Note: BIOL 001 and BIOL 002 will be accepted in lieu of BIOL 001A if taken in the 2010-11 academic year.

Minor - Meteorology

This minor is designed to prepare science and engineering students to solve interdisciplinary problems involving the atmospheric sciences.

Semester Units

Required Courses 15
METR 010, METR 051, METR 060, METR 061, METR 170A and METR 170B (12); METR 123, METR 136 or METR 163 (3)

Electives 3
Electives selected in consultation with meteorology advisor (METR 112, METR 113 or METR 131).

Total Units Required 18

Minor - Atmospheric and Seismic Hazards

This non-mathematical minor is designed to increase student understanding of natural and man-made meteorological, geological and environmental hazards.

Semester Units

Required Courses 11
METR 010, METR 112, METR 170A, METR 170B and GEOL 010

Electives 3
Electives selected in consultation with meteorology advisor (METR 113, GEOL 112)

Total Units Required 14

Minor - Climate Change Strategies

This minor is designed to increase students understanding of climate change, potential impacts, and strategies to deal with what's coming.

Semester Units

Meteorology Courses 9
METR 012 or METR 112 (3); METR 136 and METR 163 (6)

Environmental Studies Courses 9
ENVS 116 or ENVS 133 (3); ENVS 119 and ENVS 130 (6)

Total Units Required 18

Some majors require a minor of more than 13 units.

MS - Meteorology

Requirements for Admission to Classified Standing

Students wishing to pursue an MS in Meteorology must satisfy each of the following requirements:

- The student should have the equivalent of an SJSU BS degree in Meteorology or, with the approval of the department graduate committee, a degree in a physical science or in 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.
- The student should have a minimum GPA in their BS degree of 2.75 (on a scale of 0-4).
- The student must submit their Graduate Record Examination (GRE) scores.
- Applicants from non-English speaking countries must meet the university minimum TOEFL requirement (i.e., 550 or better, as outlined in the Graduate Admissions section of the catalog).

Admission to Conditionally Classified Standing

Those students who meet minimum requirements for admission to the Graduate Division, but do not meet departmental requirements, may be admitted to conditionally classified standing, on the approval of the department graduate committee. Deficiencies usually involve undergraduate meteorology courses, as well as some math courses. Upon completion of the necessary courses, the student advances from conditional to classified standing via petition to Graduate Studies.

Requirements for Admission to Candidacy

In addition to the general requirements for admission, the student must possess an adequate background in meteorology. Competence in the general areas covered by METR 121A (Dynamic Meteorology I), METR 125 (Physical Meteorology), either METR 060 or METR 171A (Synoptic Meteorology, to be decided in consultation with the department graduate committee), and METR 100W (Technical Writing), must be demonstrated to the Department Graduate Committee prior to admission to candidacy. This can be done by: satisfactory completion of these courses (or their equivalent) with a minimum grade of "B" in each; or passage of a comprehensive written examination. Students should consult with the graduate advisor concerning these alternatives.

A student with classified standing may be admitted to candidacy after completion of at least nine units of graded work as a graduate student in 100- or 200-level courses which are acceptable to the department in which the degree is sought. Note that students initially admitted with conditionally classified standing may, for example, be required to take METR 121A (Dynamic Meteorology I) to make up a deficiency (credits do NOT count toward the MS degree), and may then choose to take METR 121B (Dynamic Meteorology II), where credits DO count toward the MS degree.

The University requires that all graduate students demonstrate competency in written English prior to advancement to candidacy. Please refer to the SJSU catalog section titled "Competency in Written English" for details. MS Meteorology students are currently required to take METR 100W to satisfy this University requirement. Note that a student must pass the Writing Skills Test (WST) in order to register into METR 100W. See https://testing.sjsu.edu/twst.html for details.

Completing Requirements for the MS - Meteorology

Courses taken to meet the requirements for admission to candidacy will not be counted as part of the MS program. All students must demonstrate competency in written English.

Plan A (with Thesis)

An acceptable written research thesis and a successful oral presentation of the thesis are required.

Plan B (without Thesis)

This plan is open to students who can demonstrate to the Departmental Graduate Committee that they possess adequate professional meteorological experience.

Requirements are identical to those for Plan A, except that a thesis and METR 299 are not required. Three additional units of 200-level meteorology courses (other than 285 or 298) must substituted. In addition, a suitable topic in meteorology will be selected by the student in consultation with his or her advisor on which to prepare a carefully documented written report (for two or more units of METR 298).

	Semester Units
Core	9
METR 205A, METR 215 and METR 240	
Additional Courses	6
Complete two courses from: METR 205B, METR 206, METR 208, METR 224, METR 245, METR 280	
Electives	9
Complete nine units from: METR 121B, METR 123, METR 125, METR 130, METR 131, METR 150, METR 155, METR 160, METR 163, METR 166, METR 171B, METR 172, METR 173, METR 185 (cannot include METR 285, METR 298, METR 299), physics, computer science, and/or mathematics, chosen with consent of the advisor	
Colloquium, Thesis and Research	6
Complete six units from: METR 285 (minimum of one unit), METR 298, METR 299 (minimum of two units)	
Total Units Required	30

Mexican American Studies Department

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Professors

Marcos Pizarro, Chair

Assistant Professors

Magdalena Barrera
Julia Curry-Rodriguez

Curricula

Minor, Mexican American Studies
MA, Mexican American Studies

Introduction

The Mission of the Mexican American Studies Department is to serve SJSU students and diverse communities through an interdisciplinary Chicana/o Studies Program that is based on principles of Social Justice. The program prepares students to critically examine and address intellectual traditions and contemporary issues resulting from race, ethnicity, class, and gender intersections in Chicana/o-Latina/o and other communities. The overall goal of the MAS Department is to prepare students to critically assess the conceptualization of race and ethnicity, as it relates to and is challenged by Chicana/o communities. Students develop critical thinking skills and a comparative analysis between Chicana/o and other communities. In the end, students integrate major issues and theories from MAS courses and apply them to current problems as they plan for post-graduate work. This goal is accomplished by means of: 1.) an academic minor for undergraduate students from all academic majors; 2.) a graduate program with emphases in Policy Studies, K-20 Education, and Comparative Ethnic Studies; and 3.) serving as an academic resource for Chicana/o-Latina/o communities.

The minor in Mexican American studies is a unique interdisciplinary program of study that supplements any undergraduate major by providing a well-rounded introduction to the Chicana/o-Latina/o community, including its history, culture and social, political and economic context. The course work supports major programs in economics, business, politics, culture, education, personnel management, marketing, psychology/counseling, community development, public administration and fine arts.

The Master's program offers an interdisciplinary course of study intended to provide students with a strong intellectual analysis of diverse Chicana/o and Latina/o experiences along with skills to address real-world issues in Chicana/o, Latina/o and other communities. The curriculum is grounded in the interdisciplinary Chicana/o Studies tradition of pursuing carefully developed, culturally grounded solutions to community needs. The individual courses and programs are intended to bridge the worlds of theory, cultural analysis, and practice. Students build on a solid foundation of historical and cultural analyses and attempt to develop new approaches to long-standing social, economic, educational, political, and intellectual problems that face Chicana/o, Latina/o and other communities. The program trains students to become leaders in a number of professional fields, including: teaching, social services, health care, and community service. We also prepare students for doctoral study in Chicana/o Studies, Ethnic Studies and other academic fields.

Minor - Mexican American Studies

	Semester Units
Complete eighteen units from: MAS 010A, MAS 010B, MAS 040, MAS 074, MAS 105, MAS 115, MAS 120, MAS 125, MAS 127, MAS 130, MAS 135, MAS 144, MAS 150, MAS 160, MAS 170, MAS 175, MAS 180, MAS 185, MAS 194, MAS 195, or courses approved by the undergraduate advisor (18)	
Total Units Required	18

MA - Mexican American Studies

Requirements for Admission to Classified Standing

Minimum university requirements for admission to the Graduate Division are listed in the Admissions section of this catalog. Applicants for admission to classified standing for the MA - Mexican American Studies must have:

1. Completed an undergraduate program in an accredited institution leading to an earned baccalaureate degree.

2. Attained a grade point average of at least 2.5 (A = 4.0) in the last 60 semester (90 quarter) units attempted. An applicant in doubt about the suitability of his/her academic background should consult with the department graduate advisor.

3. In addition to the regular application for admission to the university, each applicant must submit directly to the graduate advisor of the Mexican American Studies Program two letters of recommendation, and a statement of purpose.

4. 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 admitted to candidacy for the degree in Mexican American studies. If the conditions are not fulfilled, the program reserves the right to dismiss the student from the program by notifying the Associate Vice President for Graduate Studies and Research.

Requirements for Admission to Conditionally Classified Standing

1. Completed an undergraduate program in an accredited institution leading to an earned baccalaureate degree; and

2. Attained an earned grade point average satisfactory to the minimum university admission requirements.

Requirements for Admission to Candidacy

The student may be admitted to candidacy for the MA - Mexican American Studies by complying with the requirements of the university, as outlined in the Academic Requirements section of this catalog. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement for MAS, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape. In addition, the students must have earned a 3.0 grade point average in all course work completed in graduate standing on or off campus.

With the counsel of one or more members of the department and graduate advisor, the applicant will develop an official master's degree program using the university Candidacy Form, which is submitted along with an explanatory memo to the graduate advisor and the faculty for approval. After departmental approval, this program must be approved by the Associate Vice President for Graduate Studies and Research.

MA - Mexican American Studies, Emphasis in Policy Studies

The Policy Studies Emphasis is designed to provide students with a strong background in policy analysis and development as they relate to the Chicana/o and Latina/o community. The intent of this emphasis is to prepare students to apply a Chicana/o and Latina/o perspective to the development and implementation of contemporary policies that address the needs of this and other communities.

MA - Mexican American Studies, Emphasis in Comparative Ethnic Studies

The Comparative Ethnic Studies Emphasis is designed to prepare students for doctoral study in Chicana/o Studies, Ethnic Studies and other academic fields. In addition to courses in Mexican American 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 - Mexican American Studies, Emphasis in Education

The Education Emphasis is intended to prepare students for effective work in a number of fields requiring expertise in issues relevant to Chicana/o and Latina/o education. Among the most critical areas within this emphasis is the analysis of the K-12 educational system and the development of methods for training competent professionals to work with these communities.

Degree Requirements for the MA - Mexican American Studies

	Semester Units
Emphasis in Education	30
Core Courses MAS 200, MAS 205, MAS 210, MAS 225, MAS 240 and MAS 275	18
Emphasis Sequence Choose one sequence: MAS 215, MAS 230, MAS 252, MAS 298 (Project) or elective; or MAS 215, MAS 230 or MAS 252, MAS 298 and MAS 299 (Thesis)	12
Emphasis in Comparative Ethnic Studies	30
Core Courses MAS 200, MAS 205, MAS 210, MAS 225, MAS 240 and MAS 275	18
Emphasis Sequence Choose one sequence: MAS 215, MAS 230, MAS 252, MAS 298 (Project) or elective; or MAS 215 or MAS 230, MAS 252, MAS 298 and MAS 299 (Thesis)	12
Emphasis in Policy Studies	30
Core Courses MAS 200, MAS 205, MAS 210, MAS 225, MAS 240 and MAS 275	18
Emphasis Sequence Choose one sequence: MAS 215, MAS 230, MAS 252, MAS 298 (Project) or elective; or MAS 215 or MAS 252, MAS 230, MAS 298 and MAS 299 (Thesis)	12
Total Units Required	30

Middle East Studies Program

College of Humanities and the Arts

Clark Hall 419
408-924-1364 (Voice)
408-924-4576 (Fax)

Professors

Mira Z. Amiras
Constantine Danopoulos
Shahin Gerami
Richard E. Keady
Jonathan P. Roth

Associate Professors

Persis M. Karim, Coordinator

Assistant Professors

Shantanu Phukan

Curricula

Minor, Middle East Studies

Introduction

The Middle East Studies Program is committed to helping students gain a better knowledge and understanding of the peoples, cultures, religions and conflicts of this strategic part of the world. The Middle East, as the historical home of the three Western monotheistic religious traditions - and the earlier goddess religions - leads the student to appreciate the origins, development and contemporary practice of Judaism, Christianity and Islam. Study of the region is critical to the understanding of U.S. foreign policy and global political economy.

The program provides a forum for dialogue on contemporary and historical issues of concern to the peoples and cultures of the Middle East. The program also provides background for students whose professional goals include the promotion of mutual understanding, tolerance and peace in the region. The Middle East 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, foreign languages, history, humanities, literature, political science, sociology and religious studies. All students are encouraged to seek both an interdisciplinary and a multicultural understanding of the region.

Minor - Middle East Studies

	Semester Units
Required Course	3
MDES 145	
Traditions Courses	6
Complete two courses from: MDES 070A, MDES 153, MDES 156, MDES 157, MDES 189	
Electives	6
Art History: MDES 183A, MDES 183B or MDES 183C	
History: MDES 106, MDES 115, MDES 118 or MDES 154	
Religious Studies: MDES 090, MDES 108 or MDES 112	
Political Science: MDES 144	
Supplemental Electives	3
ANTH 011, ANTH 146, BUS 133A, BUS 146, BUS 161A, COMM 174, GEOG 101, MDES 180, MDES 184, MUSC 019, POLS 004, POLS 154, SOCI 162 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

Military Science Department (Army ROTC)

College of Applied Sciences and Arts

Department of Military Science
Varsi Hall, Room 232
Santa Clara University
500 El Camino Real
Santa Clara, CA 95053
408-554-4034(Voice)
408-554-2139 (Fax)

Professors

Jason Cullinane
Larry Gnewuch
CPT Mike Pope
John Tao, Chair

Curricula

Minor, Military Science

Introduction

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 001A-B, and 002A-C), 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 002C). 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 13OA-C, and 14OA-B. 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.

Minor - Military Science

	Semester Units
Plan A	24
These courses are Without military obligation or basic camp.</cstyle:>	
MILS 001A, MILS 001B (2/2), MILS 002A and MILS 002B (2/2)	8
MILS 130A, MILS 130B (4/4), MILS 140A and MILS 140B (4/4)	16
Plan B	16
With military service or basic camp.</cstyle:>	
MILS 130A, MILS 130B (4/4), MILS 140A and MILS 140B (4/4)	
Total Units Required	16-24

Moss Landing Marine Laboratories

College of Science

Moss Landing Marine Laboratories
Marine Science Graduate Program
8272 Moss Landing Road
Moss Landing, CA 95039
831-771-4400

Professors

Kenneth H. Coale, Director MLML
Jonathan B. Geller, MLML
James T. Harvey, Chair MLML
Nicholas A. Welschmeyer, MLML

Associate Professors

Michael H. Graham, MLML

Assistant Professors

Ivano W. Aiello, MLML
Erika McPhee-Shaw, MLML

Adjunct Professors

Simona Bartl, MLML
Lawrence Breaker, MLML
Dave Ebert, MLML
Lara Ferry-Graham, MLML
Stacy L. Kim, MLML
Valerie J. Loeb, MLML
John S. Oliver, MLML
G. Jason Smith, MLML
Rick Starr, MLML
Diana Steller, MLML

Other Faculty

Joan M. Parker, MLML

Curricula

MS, Marine Science

Introduction

Moss Landing Marine Laboratories (MLML) host and administer an interdisciplinary Master 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' mission is to: "Provision the Pioneers of the Future in Marine Sciences". We do this by providing our students with a cutting-edge education that emphasizes mentoring and teaching integrated with independent research. Through our curriculum and research-based graduate program we prepare students for careers in science, education and outreach, conservation, policy and management, as well as the pursuit of doctoral degrees related to the marine sciences.

The great wealth of nearby marine resources, the faculty emphasis on mentoring and teaching with integrated research, and the excellent facilities, staff, and marine operations contribute to make this one of the best programs for a Master of Science in Marine Science in the United States.

MLML strive to provide its graduates with:

- An increased depth of understanding of selected topics in the marine sciences both broad and specific to their specialty or field of study, such as: Physical Oceanography, Biological Oceanography, Chemical Oceanography, Geological Oceanography, Marine Phycology, Marine Ichthyology, Marine Turtle, Bird and Mammal Ecology, and Marine Invertebrate Zoology.
- An expertise in acquiring knowledge within their specific field of scientific study.
- An ability to critically analyze scientific research performed by themselves and by others.
- An ability to pose relevant scientific hypotheses or questions that may then serve to guide their thesis research within their specific field.
- A proficiency in the design and implementation of experiments or data collection methodologies to address specific hypotheses/ questions as applicable to their field of scientific study.
- A mastery of tools and instrumentation for data collection and analysis (including analytical and statistical techniques) specific to their scientific field of study.
- An ability to place their work within the larger context of their specific field of scientific study and to clearly identify the implications of their research for that field.
- A proficiency in oral communication by being able to present research clearly and concisely. A proficiency in written communication through clearly and concisely utilizing an appropriate scientific writing style.

MS - Marine Science

For graduate information contact MLML.

Admission to the Program

Application and admission requirements are available at http://gradprog.mlml.calstate.edu

Degree 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. MLML' program requirements are the same regardless of the student's home campus affiliation; however, admission, graduation and department requirements may vary from campus to campus.

Degree requirements for the M.S. degree in Marine Science are:

- Three of the following five core courses: MS 103, MS 141, MS 142, MS 143 and MS 144
- MS 104: Quantitative Marine Science with a grade of "B" or better, or transfer in with equivalent mathematical background. MS 104 course cannot be counted toward the 30-unit degree requirement.
- A minimum of fifteen upper division units (200 level) including MS 285: Graduate Seminar (2 unit minimum and 4 unit maximum) and 4 units of MS 299: Master's Thesis.
- The remaining units may be electives from either 100-level or 200-level courses. No more than 15 units of 100-level course work may be used toward the 30-unit requirement.
- Fulfillment of Classification, English Competency Writing and Advancement to Candidacy.
- A thesis approved by the student's thesis committee. The thesis must conform to the rules set forth by the home campus graduate office and meet the academic standards of the MLML graduate program.
- An oral thesis defense in the form of a seminar open to the general public. The student's thesis committee must be present, may require further oral questioning after the seminar, and will evaluate the success of the presentation.

All students shall maintain enrollment in the MLML graduate program until all degree requirements are met. All students shall complete core courses by their third semester to qualify for Classified standing. 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 Classification requirement. If a student receives lower than a "B" in a non-core class they may either retake the course or take another course to use towards their 30-unit requirement. Students may enroll in MS 298: Research in Marine Science, while they are conducting their research, or to maintain enrollment with their home campus. Students are eligible to use 2-units of MS 298 toward their 30-unit requirement in addition to the 4-unit MS 299: Master's Thesis. Students are encouraged to complete their degree requirements within three years.

English Competency Writing Requirement

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 successfully completing a Thesis Proposal before they advance to candidacy. The Student's thesis committee determines successful completion of this requirement.

Please refer to the MLML Graduate Student Handbook for additional degree requirements, http://gradprog.mlml.calstate.edu {http://www.mlml.calstate.edu}.

Music and Dance

College of Humanities and the Arts

Music Building 179
408-924-4673

Professors

Janet M. Averett, Associate Director
Brian Belet
Joseph P. Frank
Pablo E. Furman
Edward C. Harris, Director
Gary W. Masters
Fred Mathews
William R. Meredith
Janie Scott

Assistant Professors

Kathryn Adduci
Gordon Haramaki
Diana M. Hollinger
Aaron J. Lington
Gwendolyn Mok

Curricula

BA, Music
BM, Music, Concentration in Jazz Studies
BM, Music, Concentration in Composition
BM, Music, Concentration in Music Education
BM, Music, Concentration in Performance
BA, Creative Arts (Interdepartmental)
BA, Dance
BFA, Dance
Minor, Music
Minor, Dance
MA, Music

Introduction

Music and Dance form an integral part of lives, from the logos that introduce every media program, to the dances and music that provide identity in our diverse backgrounds, and the social interaction that teaches us to live together. Study and participation in music and dance has proven to further not only creativity and critical thinking, but our sense of cooperation and community. Participation in the performing arts ranges from skilled soloist or cutting-edge electronic music producer, to choir members and instrumentalists performing for a joyous seasonal concert. With a rich history of dedication and regional involvement, the School of Music and Dance offers course work and ensembles that embrace the diversity of our region.

Located in the heart of Silicon Valley, the School of Music and Dance offers access to both the area's industry and to an important cultural region. San José supports the nationally acclaimed Opera San José, founded by SJSU Professor Emeritus Irene Dalis, San José American Musical Theater, the nation's largest independent musical theatre company, the Symphony Silicon Valley, the Gilbert and Sullivan Society, the Limon Dance Company of New York/San José (west coast), San José Ballet Theater, Margaret Wingrove Dance Company, Ballet San José of Silicon Valley, and thriving community youth orchestras, band programs, and cultural ensembles including mariachis, taiko drumming, and numerous Pacific Rim Ensembles. Within an hour's drive, the San Francisco Symphony, Opera and Ballet are available to a community famous for creation of computer adventures and high-tech hardware.

Professional degree programs lead to careers in performance, composition, jazz studies, and music education including a fifth year credential program. We highlight core courses in our curriculum that include experience in performance, music systems (theory), choreography (for dancers), technology and improvisation. Beyond the core courses, individual contracts or concentrations within the BA and BM degree address professional opportunities that include:

- Credentialed school instruction
- Private studio instruction
- Choreographers and/or dancers for the concert stage, musical theatre, folk ensembles or night clubs
- Vocalists or instrumentalists for the concert stage, opera, musical theatre, jazz
- Composers and/or arrangers for film, television, multimedia
- Sound engineering and music technology
- Conductors in all performance areas
- College or university instruction
- Arts and education administration
- Writer/scholar in Music or Dance

The School of Music and Dance is fully accredited by the National Association of Schools of Music, the National Association of Schools of Dance, and the National Council of Accreditation of Teacher Education and the California Commission on Teacher Credentialing. It is home to more than 400 music and dance majors who pursue the Bachelor of Arts, Bachelor of Music, and Master of Arts degree. Many members of the university community also participate in music and dance course work and ensembles. One may earn a music or dance minor, or simply enjoy the opportunities that a dedicated ensemble or performance program provides.

SJSU is also home to the Ira F. Brilliant Center for Beethoven Studies. The School hosts two nationally recognized artist-in-residence ensembles, the Cypress String Quartet and the Premiere Saxophone Quartet.

Music Honors Program

The Music Honors Program is designed for the superior student who has outstanding talent and scholastic ability and 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 (an 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 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 190A and 190B to receive departmental honors at the awarding of the baccalaureate degree.

Music and Dance Ensembles and Organizations

Student performing organizations in the School of Music and Dance include the Symphony Orchestra, the Wind Ensemble, Symphonic Band, Concert Choir, University Women's Chorus, Gamelan, Opera Theatre, Gospel Choir, Spartan Marching Band, Jazz Orchestra, Percussion Ensemble, Pep Band, Contemporary Dance and Musical Theatre companies and many other small vocal and instrumental ensembles. Participation in student ensembles is by audition and open to any regularly enrolled student.

M.E.N.C., A.C.D.A., Mu Phi Epsilon, and Kappa Kappa Psi, national professional organizations, maintain active chapters at San José State University. These groups play a vital part in the cultural life of the university and the community.

Policies and Basic Requirements for Music Majors

See Music Major Undergraduate and Graduate Handbooks for current specific policies (link to Web site)

1. All music majors must demonstrate an acceptable level of performance ability in an applied area offered in the curriculum. All entering freshmen and transfer students must perform a placement audition for the appropriate applied music committee. Successful completion of this audition is necessary for admittance to the school. A student may be admitted on probation, but must attain satisfactory standing at the end of the first semester of applied study. This standing is determined by the appropriate applied music committee at the jury examination. Students who have dropped out of school or have discontinued applied studies for credit for one semester or more are required to perform another placement audition in order to resume study. Placement auditions take place during orientation days. See Schedule of Classes for exact times and places.

2. All new students must meet with a music advisor each semester of study. Additionally, new students should plan to attend the important orientation and advisement meeting that is scheduled during the two days prior to the first day of classes for the semester. Times and places are posted in the Schedule of Classes. The advisor will guide course selection and assist with school and university regulations and academic expectation so that the student can reach degree completion successfully. It is the responsibility of the student to consult with the appropriate School of Music and Dance advisor to obtain this information. All music majors and minors must secure a music advisor's approval and signature for each registration and/or change of program. Any change of program must be approved by the director.

3. Each music major is required to perform a satisfactory jury examination at the conclusion of each semester of applied study. Failure to appear for a required jury examination will result in a grade of Incomplete in applied study. A student performing an unsatisfactory jury examination for two succeeding semesters will be dropped from the area of applied study.

4. All music majors must participate in the appropriate major performing ensemble for at least eight semesters of registration with a minimum of four semesters during upper division applied study. See Music Major Undergraduate Handbook for specific policies about ensemble participation.

5. All music transfer students must achieve placement in their applied area, music systems and piano proficiency, regardless of units completed at another institution. Consult the Schedule of Classes for scheduled applied placement auditions, ensemble auditions and the music systems (theory) placement exam which is given *only* in the two days before classes begin. Those who do not take the music systems placement exam at this time will automatically be placed in Music 009 until they achieve placement. Other transferable credits must be negotiated with the music major advisor on an individual basis.

6. All music majors and minors must obtain a Music Use Fee receipt from the Bursar's Office and present it to the School of Music and Dance office in order to receive a Music Use Fee Card which authorizes use of practice facilities and class equipment. Applied studio instruction is authorized only for students with current Music Use Fee Cards. All students are also assessed an applied music fee each semester.

7. Music majors must meet the requirements for piano proficiency. Students must enroll in MUSC 25A or 25B until the proficiency is completed by exam or qualified students may test out by performing required skills for the piano faculty during the pre-school testing time cited in the Class Schedule.

8. Voice students seeking the Bachelor of Music - Performance degree must meet foreign language requirement: completion of one year university-level foreign language, or four years of secondary study, or equivalency examination.

9. See School of Music and Dance Undergraduate Handbook for additional detailed policies.

Policies and Basic Requirements for Dance Majors

1. Dance majors are required to be advised each semester and receive progress evaluations each year from their advisors. Evaluation assists the faculty in counseling about career goals, academic achievement and steps in the degree program.

2. In the year of graduation, the dance major is required to present a portfolio of accomplishments in dance to a jury of the full-time dance faculty. Students must obtain an outline of the requirements from the portfolio advisor.

BA - Music

This is a flexible program of general studies with minimum performance requirements that allows students to combine studies in music with other fields of interest. An entrance audition is required. All students must complete the core classes and then select electives from at least three categories, in consultation with the Music Advisor, and directed toward a specific Capstone. Ensemble participation is a co-requisite of applied lessons at all times.

Semester Units

General Education Requirements 45
Of the 51 units required by the university, 6 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Core Courses 32

Lower Division 20
MUSC 001A, MUSC 001B, MUSC 002A, MUSC 002B, MUSC 003A, MUSC 009, MUSC 012, MUSC 013, MUSC 019, MUSC 025A and MUSC 025B

Upper Division 12

The upper division courses are limited to participation in ensembles and available to lower division students. See the Music Advisor for details.</cstyle:>
MUSC 110, MUSC 111, MUSC 120 and MUSC 182 (10); MUSC 148A or MUSC 148B (2)

Additional Courses in Music..... or information on a Music Technology emphasis.

Take 18 units from at least two of the following categories. Five units must be upper division. Select courses in consultation with an advisor directed towards one of the capstone projects described below. All students must complete the capstone project under MUSC 182, listed above. Please see advisor for information on a Music Technology emphasis.</cstyle:>

Theory, Arranging and Composition
MUSC 003B, MUSC 004A, MUSC 004B, MUSC 102, MUSC 103, MUSC 104, MUSC 106, MUSC 109

History and Literature
MUSC 112, MUSC 116, MUSC 117, MUSC 142, MUSC 144, MUSC 145, MUSC 181 (2 units maximum of MUSC 181)

Conducting
MUSC 147A, MUSC 147B

Improvisation
MUSC 040A, MUSC 140B, MUSC 140C

Music Technology

Please see advisor for information on a Music Technology emphasis.</cstyle:>

Beginning Methods and Techniques
MUSC 026A, MUSC 041A, MUSC 041B, MUSC 125A, MUSC 125B, MUSC 125C, MUSC 125D

Applied Lessons

By audition and special permission from Director. Maximum of four units.</cstyle:>
MUSC 029, MUSC 030, MUSC 031, MUSC 032, MUSC 033, MUSC 034, MUSC 035, MUSC 036, MUSC 036A, MUSC 037, MUSC 038A, MUSC 129, MUSC 130, MUSC 131, MUSC 132, MUSC 133, MUSC 134, MUSC 135, MUSC 136, MUSC 136A, MUSC 137, MUSC 138A

Chamber Music

Maximum of two units can be counted towards major.</cstyle:>
MUSC 160A, MUSC 160D, MUSC 160F, MUSC 160H, MUSC 160J, MUSC 160K, MUSC 160L, MUSC 160M

Ensembles

Maximum of four units. Ensembles required as corequisite for those receiving applied lessons.</cstyle:>
MUSC 150A, MUSC 153, MUSC 154, MUSC 157, MUSC 158, MUSC 159, MUSC 160F

Capstone Project

One of the following: undergraduate thesis, lecture/demonstration, or an appropriate project approved by the Director and area coordinator. All students must complete MUSC 182 (see Upper Division).</cstyle:>

General Electives or Minor 23

All general electives must be taken outside of music.</cstyle:>

Total Units Required 120

BM - Bachelor of Music

Students in this program are expected to register for Applied Music and one major ensemble each semester. They are also expected to complete both a junior and senior recitals or project to be approved by appropriate concentration faculty.

BM - Bachelor of Music, Concentration in Composition

Private composition lessons are at the heart of this degree program, with many opportunities for students to hear their own works performed by other students and faculty members. Composition students also meet regularly as a group with the faculty coordinator to hear and discuss their compositions. Students in this program must complete both junior and senior projects in addition to the regular course of study.

Semester Units

General Education Requirements 42
Of the 51 units required by the university, 9 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation and Support for the Major 6-8

The student must also demonstrate piano proficiency (see #7 under policies).</cstyle:>
MUSC 019 and MUSC 120

Requirements in the Major 72

Core Courses 50
MUSC 001A, MUSC 001B, MUSC 002A, MUSC 002B, MUSC 003A, MUSC 003B, MUSC 004A, MUSC 004B, MUSC 012, MUSC 013, MUSC 110 and MUSC 111 (24); MUSC 029, MUSC 030, MUSC 031, MUSC 032, MUSC 033, MUSC 034, MUSC 035, MUSC 036, MUSC 037 or MUSC 038 (8); MUSC 138 (8); MUSC 150A, MUSC 152, MUSC 153 or MUSC 154 (8); MUSC 040A, MUSC 140B, MUSC 140C, MUSC 148A, MUSC 148B or MUSC 148C (2)

Composition Concentration 17
MUSC 102 (3); MUSC 103, MUSC 104, MUSC 147A, MUSC 167 and MUSC 170A (14)

Composition Electives 5
Complete five units from: MUSC 025B, MUSC 109, MUSC 112, MUSC 116, MUSC 125A, MUSC 125B, MUSC 125C, MUSC 125D, MUSC 160A, MUSC 160B, MUSC 160D, MUSC 160F, MUSC 160J, MUSC 160K, MUSC 160L, MUSC 160M, MUSC 166, MUSC 168, MUSC 169, MUSC 170B, MUSC 170C (0-2)

Electives 8-10

Total Units Required 132

BM - Music, Concentration in Jazz Studies

The B.M. concentration in Jazz Studies is a degree tailored for the student intent on pursuing an active career as a professional jazz musician. Emphasis is placed on jazz improvisation, jazz performance styles, jazz arranging/composition, and jazz pedagogy. Students receive in-depth private instruction, and there are numerous opportunities for live performances. Students are expected to complete a senior project in addition to the regular course of study.

Semester Units

General Education Requirements 42
Of the 51 units required by the university, 9 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation and Support for the Major 9-11
The student must also demonstrate piano proficiency (see #7 under policies).</cstyle:>
MUSC 019, MUSC 100W and MUSC 120

Requirements in the Major 67

Core Courses 46
MUSC 001A, MUSC 001B, MUSC 002A, MUSC 002B, MUSC 003A, MUSC 003B, MUSC 004A, MUSC 004B, MUSC 006, MUSC 012, MUSC 013, MUSC 027A, MUSC 027B, MUSC 110 and MUSC 111 (26); MUSC 030, MUSC 033, MUSC 034, MUSC 035, MUSC 036, MUSC 036A, MUSC 037 or MUSC 038A (4); MUSC 150A, MUSC 153, MUSC 154, MUSC 157, MUSC 159 or MUSC 160F (8); MUSC 040A (2); MUSC 130, MUSC 133, MUSC 134, MUSC 135, MUSC 136, MUSC 136A, MUSC 137 or MUSC 138A (4); MUSC 148A (2)

Jazz Studies Concentration 21
MUSC 102, MUSC 104, MUSC 106A, MUSC 106B, MUSC 140B, MUSC 140C, MUSC 170A and MUSC 182 (18); MUSC 167 or MUSC 170B (3)

Electives 10-12

Total Units Required 132

BM - Bachelor of Music, Concentration in Performance

The Bachelor of Music in Performance program is designed for the student with a career goal as a professional singer or instrumentalist and teacher. In addition to the core courses, specific courses include weekly private lessons with outstanding professors, participation in choral ensembles, opera theater, symphonic band, symphony orchestra along with small ensemble and solo performance opportunities. Students are expected to present both a junior and senior recital.

Semester Units

General Education Requirements 42
Of the 51 units required by the university, 9 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation and Support for the Major 6-18
MUSC 019, MUSC 120, piano proficiency (see under Policies) and voice emphasis (see under Policies)

Requirements in the Major 70

Core Courses 48
MUSC 001A, MUSC 001B, MUSC 002A, MUSC 002B, MUSC 003A, MUSC 003B, MUSC 004A, MUSC 004B, MUSC 012, MUSC 013, MUSC 110 and MUSC 111 (24); MUSC 029, MUSC 030, MUSC 031, MUSC 032, MUSC 033, MUSC 034, MUSC 035, MUSC 036, MUSC 037 or MUSC 038 (8); MUSC 129, MUSC 130, MUSC 131, MUSC 132, MUSC 133, MUSC 134, MUSC 135, MUSC 136, MUSC 137 or MUSC 138 (8); MUSC 150A, MUSC 152, MUSC 153 or MUSC 154 (8); MUSC 040A, MUSC 140B, MUSC 140C, MUSC 148A, MUSC 148B or MUSC 148C (2)

Performance Concentration 22

Conducting and Upper Division Music Theory 8
MUSC 147A (2); Complete two courses from: MUSC 102, MUSC 103, MUSC 104 (6)

Applied Requirements, By Advisement 14
Choose an emphasis area below.</cstyle:>

Voice Emphasis 14
See language requirement under Policies.</cstyle:>
MUSC 041A (1), MUSC 041B (1), MUSC 142 (2) and MUSC 144 (4); *Music electives by advisement:* Complete three units from: MUSC 025B, MUSC 160A, MUSC 160D, MUSC 144 (3); *Music electives by advisement:* Complete three units from: MUSC 102, MUSC 103, MUSC 104, MUSC 112, MUSC 116, MUSC 124, MUSC 147B, MUSC 180, MUSC 190A, MUSC 190B (3)

Keyboard Emphasis 14
MUSC 144 (6), MUSC 145 (2) and MUSC 146A (2); *Music electives by advisement:* Complete four units from: MUSC 102, MUSC 103, MUSC 104, MUSC 112, MUSC 116, MUSC 124, MUSC 143, MUSC 144, MUSC 147B, MUSC 160D, MUSC 160J, MUSC 180, MUSC 190A, MUSC 190B (4)

Symphonic Instrument Emphasis 14
MUSC 160B, MUSC 160D, MUSC 160H, MUSC 160J, MUSC 160K, MUSC 160L or MUSC 160M (8); *Music electives by advisement:* Complete three units from: MUSC 025B, MUSC 140B, MUSC 140C, MUSC 147B, MUSC 160D, MUSC 153, MUSC 154 (3); *Music electives by advisement:* MUSC 102, MUSC 103, MUSC 104, MUSC 112, MUSC 116, MUSC 124, MUSC 180, MUSC 190A or MUSC 190B (3)

Electives 0-12

Total Units Required 132

BM - Bachelor of Music, Concentration in Music Education

Semester Units

General Education Requirements 42
Of the 51 units required by the university, 9 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation and Support for the Major 6-10
MUSC 019, MUSC 120 and piano proficiency (see under Policies) (0-4)

Requirements in the Major 71

Core Courses 40
MUSC 001A, MUSC 001B, MUSC 002A, MUSC 002B, MUSC 003A, MUSC 003B, MUSC 004A, MUSC 004B, MUSC 012, MUSC 013, MUSC 110 and MUSC 111 (24); MUSC 029, MUSC 030, MUSC 031, MUSC 032, MUSC 033, MUSC 034, MUSC 035, MUSC 036 or MUSC 037 (4); MUSC 130, MUSC 131, MUSC 132, MUSC 133, MUSC 134, MUSC 135, MUSC 136 or MUSC 137 (4); MUSC 150A, MUSC 153 or MUSC 154 (8); MUSC 040A, MUSC 140B, MUSC 140C, MUSC 148A, MUSC 148B or MUSC 148C (2)

Music Education Concentration 31
Select either the Instrumental or the Choral/General emphasis below. All students must take the Common Courses below.</cstyle:>

Common Courses 16
MUSC 102, MUSC 103, MUSC 147A, MUSC 147B, MUED 140 and MUED 142 (14); by advisement select two units of large or chamber ensemble outside of major performing area to satisfy breadth requirement (2)

Instrumental Emphasis 15
MUSC 026A (1), MUSC 028 (1), MUSC 125A (2), MUSC 125B (2), MUSC 125C (2), MUSC 125D (1), MUSC 126 (1), MUED 170A (2) and MUED 175 (3)

Choral/General Emphasis 15
MUSC 028 (1), MUSC 041A (1), MUSC 041B (1), MUSC 125A (1), MUSC 125B (1), MUSC 125C (1), MUSC 125D (1), MUSC 185A (3), MUED 170B (2) and MUED 175 (3)

Electives 7-11

Total Units Required 132

BA - Creative Arts (Interdepartmental)

See index.

BA - Dance

Semester Units

General Education Requirements 42
Of the 51 units required by the university, 9 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2
Satisfied by major requirements.

Preparation and Support for the Major 9
MUSC 010A or ARTH 015 (3); DANC 102 (3); MUSC 100W (3)

Requirements in the Major 50

Dance Technique and Performance 29
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, Ballet, or Jazz.</cstyle:>

Dance Area
Choose one area below.</cstyle:>

Modern Dance Area 10
DANC 040B, DANC 140A or DANC 140B (at least 2 units must be 140A or 140B) (6); DANC 042B, DANC 142A or DANC 142B (at least 2 units must be 142A or 142B) (4)

Jazz Dance Area 10
DANC 042B, DANC 142A or DANC 142B (at least 2 units must be 142A or 142B) (6); DANC 040B, DANC 140A or DANC 140B (at least 2 units must be 140A or 140B) (4)

Additional Technique 6
DANC 049A, DANC 049B or DANC 149C (1); DANC 053 (1); DANC 041B, DANC 141A or DANC 141B (4)

Choreography 9
DANC 043 (1), DANC 145A (3), DANC 145B (3) and DANC 198 (2)

Performance 4
DANC 112 or DANC 194

Theory 21
DANC 051A (3); DANC 051B (1); DANC 075, DANC 144A, DANC 144B and DANC 147A (11); DANC 148 or DANC 150B (3); DANC 150A (3)

Electives 19
By advisement (12 units must be in non-dance academic courses)

Total Units Required 120

BFA - Dance

Semester Units

General Education Requirements 42
Of the 51 units required by the university, 9 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 0
Satisfied by major requirements.

Preparation and Support for the Major 6
DANC 040B or DANC 042B (2); DANC 043 (1); MUSC 010A (3)

Support for the Major 6
DANC 102
MUSC 100W

Requirements in the Major 62

Dance Technique and Performance 48

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.</cstyle:>

Modern Dance or Jazz Dance Option 12
DANC 040B, DANC 140A or DANC 140B; or DANC 042B, DANC 142A or DANC 142B (at least 4 units must be level IV)

Additional Technique 11
DANC 040B, DANC 140A or DANC 140B; or DANC 042B, DANC 142A or DANC 142B (which was not taken in Dance Option, and at least 2 units at Level III or IV) (4); DANC 041B (2); DANC 141A or DANC 141B (2); DANC 049A, DANC 049B or DANC 149 (2); DANC 053 (1)

Performance Requirements 9
Any combination of DANC 112 or DANC 194 (to reach 9 units, at least 4 units must be DAN 112)

Choreography 9
DANC 145A and DANC 145B (6); DANC 145C or DANC 186 (3)

Senior Project 3
DANC 147A

Production 4
DANC 051A (3) and DANC 051B (1)

Theory 14
DANC 075 (2), DANC 144A (3), DANC 144B (3), DANC 150A (3) and DANC 150B (3)

Electives 4
By advisement from the following classes: DANC 049A, DANC 049B, DANC 053, DANC 140A, DANC 140B, DANC 141A, DANC 141B, DANC 145C, DANC 148, DANC 149C, DANC 186, DANC 198

Total Units Required 120

Minor - Music

Semester Units

Music Fundamentals 3
MUSC 009 (3), MUSC 001A and MUSC 001B (3) or MUSC 002A and MUSC 002B (3)

Music Recitals 2
Complete two units from: MUSC 081, MUSC 181

Performance Skills 2
Complete two units from: MUSC 025A, MUSC 025B, MUSC 026A, MUSC 028

Ensemble Performance 2
Complete two units from: MUSC 150A, MUSC 151, MUSC 152, MUSC 153, MUSC 154, MUSC 157, MUSC 158, MUSC 159, MUSC 160A, MUSC 160D, MUSC 160E, MUSC 160F, MUSC 160H, MUSC 160J, MUSC 160K, MUSC 160L, MUSC 160M (repeatable for credit)

Music Support Courses 9
MUSC 010A, MUSC 012 or MUSC 019 (3); Complete six units from: MUSC 110, MUSC 111, MUSC 117, MUSC 120, MUSC 125A, MUSC 125B, MUSC 125C, MUSC 125D, MUSC 167, MUSC 168, MUSC 169, MUSC 170A, MUSC 170B, MUSC 170C, MUSC 185A (6)

Total Units Required 18

Minor - Dance

Semester Units

Core 6
DANC 010, MUSC 010A or ARTH 015

Technique Paths 9
Complete nine units of any combination of beginning, intermediate or advanced courses in Ballet, Jazz or Modern (all courses are 2 units) or Tap I, II, III (1 unit each). Only 2 units may be level I.

Electives 8
Complete eight units from: DANC 040A, DANC 041A, DANC 042A, DANC 043, DANC 049A, DANC 049B, DANC 051A, DANC 051B, DANC 053, DANC 075, DANC 102, DANC 112, DANC 145A, DANC 145B, DANC 145C, DANC 148, DANC 150A, DANC 150B, DANC 186, DANC 194

Total Units Required 20

MA - Music

Advisor: Diana Hollinger

Requirements for Admission to Classified Standing

Admission to the Graduate Division requires the equivalent of a San José State University Bachelor of Music or Arts degree. See Schedule of Classes (or contact advisor) for exact times and places.

1. Demonstration of graduate level performance ability in audition, or

2. Presentation of a portfolio of compositions demonstrating graduate level skill, or

3. Presentation of representative research work demonstrating graduate level competence.

Requirements for Admission to Conditionally Classified Standing

Students who meet minimum requirements for admission to the Graduate Division but who do not meet classified standing requirements may, with the approval of the graduate advisor, be admitted to conditionally classified standing. These requirements will be made a part of the admission record. After completion of these requirements, the student must request a change to classified standing. Until graduate entrance examinations are passed or remedial work is satisfactorily completed, students may not enroll in restricted graduate courses.

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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape. Students with foreign degrees must pass MUSC 100W and have a score of 550 or higher on the Test of Fluency in the English Language (TOFEL).

Requirements for Admission to Candidacy

The basic university requirements for admission to candidacy for the Master of Arts degree are outlined in detail in the Academic Regulations section of this catalog. In addition, the applicant must:

1. Demonstrate an aptitude for advanced work in music as measured by performance in academic courses, instructor appraisals, auditions, special qualifying tests or other means. In the music education concentration, students must have a minimum of one year of teaching experience in their fields prior to any application for admission to candidacy.

2. Upon completion of eighteen units, the student should meet with the graduate advisor to complete a formal plan of study according to Plan A or B as outlined below. The content will be determined by the individual student's background, area of concentration and thesis or project.

Completing Requirements

All programs include a 12 unit core to be taken at the earliest opportunity after enrollment: MUSC 200 (Music Bibliography and Research Techniques); MUSC 201 (Studies in Music History); and MUSC 202 (Studies in Musical Systems); and MUSC 221, MUSC 220 or MUSC 203.

Twelve units of graduate level and approved upper division elective courses related to the degree objective will complete the program.

Plan A (Thesis or Composition)

Six unit will be devoted to the thesis (or recital) based on an approved design including such investigations as the collection and analysis of new data; synthesis within the literature of the major field; and/or documentary evidence of new, unique, or significant material in any of the various areas of music or music education.

The composition is to be an original work of a nature approved by the candidate's major professor and committee.

The thesis or composition is to be presented in written, bound form according to the requirements of the Graduate Division (see Thesis section of this catalog). An oral defense of the thesis or composition is required.

Plan B (Recital)

With this program, the candidate will appear in two applied performances approved by the candidate's committee. These performances are to be recorded on tape; the tapes to be retained in the School of Music Library.

	Semester Units
Plan A (with Thesis or Composition)	30
Core Courses	12
Electives	12
Thesis or Composition	6
Plan B (Performance without Document)	30
Core Courses	12
Electives	12
Recital	6
Total Units Required	30

Nuclear Science Program

College of Science

Duncan Hall 180
408-924-4954

Professors

Herbert B. Silber, Director

Introduction

The Nuclear Science Facility of San José State University is the unique focus of all related teaching and research activity on campus.

Undergraduate students have an opportunity to work in the facility as part of their general education classes in chemistry and physics. Students majoring in chemistry, physics, and biology come to the facility for some of their classes or for undergraduate research projects. The Department of Physics offers its major with a concentration in Nuclear Science. Consult the department listings for degree requirements and course descriptions.

SJSU also offers MS degrees in Chemistry and Physics. The course of study could emphasize nuclear chemistry or nuclear physics depending on the student's particular interest. Consult the chemistry or physics listings respectively for degree requirements and course descriptions.

Resources

The university's Nuclear Science Facility is a unique physical plant specifically designed and built for classroom, laboratory and research work in nuclear science and technology. The Nuclear Science Facility is a freestanding 10,000 square foot, three-story building contiguous to the university's other science and classroom facilities. It is comprised of a briefing room, administrative and faculty offices, four undergraduate wet labs, two undergraduate counting rooms, five graduate wet labs, a high activity storage room, plant and animal experiment rooms, a waste water collection and sampling system, an ambient air sampling system and storerooms. The facility is staffed full-time by a director, an office manager, senior technologists and a radiation safety officer.

The reference library within the facility is comprised of approximately 300 volumes of standard science reference works and texts covering basic and advanced nuclear physics science and technology, radiobiology, health physics and standards and procedures. This collection supplements the university library, comprised of 900,000 volumes and more than 2,100 science and engineering periodicals.

Research

Research in the Nuclear Science Facility is sponsored through grants from DOE, NASA, NSF, and others. Most research is done in collaboration with other universities and national laboratories.

Nursing

College of Applied Sciences and Arts

Division of Health Professions

Health Building 420
408-924-3131

Professors

Kathy Abriam-Yago
Karen Bawel-Brinkley
Daryl Canham
Jayne Cohen, Director
Suzanne Malloy
Chia-Ling Mao
Colleen O'Leary-Kelley
Diane Stuenkel

Associate Professors

Toby Adelman
Deepika Goyal
Chris Hooper
Lori Rodriguez
Vivian Wong

Assistant Professors

Susan McNiesh

Curricula

BS, Nursing
MS, Nursing
Certificate, California School Audiometrist
Credential, School Nurse

Introduction

The programs in The Valley Foundation School of Nursing are central to the San José State University mission of preparing graduates for service and scholarship. The mission of The Valley Foundation School of Nursing is to provide innovative education in the art and science of professional nursing while empowering our baccalaureate and masters graduates to be socially and ethically responsible clinicians, leaders, and scholars who will meet the changing healthcare needs of a diverse global community.

General Information

A unique program of quality faculty, curriculum and innovative community service distinguishes The Valley Foundation School of Nursing at San José State University, which celebrated its 50th anniversary in the 2005-06 academic year. Building on its respected tradition at San José State University, The Valley Foundation School of Nursing has foreseen changes in the requirements for nursing education to meet nurses' and society's needs. The School entered the twenty-first century with a new curriculum and new experiential opportunities prior to graduation. New and expanded offerings in pre- and post-licensure as well as continuing education for undergraduate and graduate level nurses are offered. The undergraduate nursing program is nationally accredited by the Commission on Collegiate Nursing Education and is approved by the California Board of Registered Nursing. Graduates of the undergraduate program are eligible to apply for the California Public Health Nurse Certificate. The graduate program is accredited by the Commission on Collegiate Nursing Education.

Women and men seeking a baccalaureate degree in nursing will find a quality program to prepare them for professional nursing practice in a variety of acute care and community settings, with opportunities for graduate study and continuing education. Nursing majors at SJSU receive clinical experience in community-health agencies, Nurse-Managed Centers and local hospitals under the guidance of nursing faculty from the university. The pre-licensure nursing program is an innovative academic program that emphasizes professional education based on strong general education. The post-licensure RN-to-BSN Bridge program provides opportunities for registered nurses to earn the baccalaureate degree at a pace that fits their lifestyle. The graduate program in nursing offers additional opportunities for nurses to obtain advanced nursing education in several options. The post-master's certificate programs permit those nurses with master's degrees in nursing to earn a specialized certification for advanced practice.

Recognizing the importance of giving students educational opportunities to prepare for employment in the changing health care system, The Valley Foundation School of Nursing provides numerous opportunities for students in community settings. Among these are the faculty and student operated Nurse Managed Centers. The Centers' work and patient outcomes have been presented nationally and internationally through publications and presentations. The Nurse Managed Centers located in the Santa Clara and Santa Cruz counties provide health promotion and illness prevention services to populations in need.

Active student clubs are the California Nursing Student's Association, Hispanic Nursing Student's Association, Vietnamese Nursing Student's Association, Filipino Nursing Student's Association, Medical-Surgical Club, Public Health Nursing Club, Nurses Christian Fellowship Group, the Student Nurses of African Descent Association, and Male Association of Nursing Students. These clubs provide student support and opportunities to further develop leadership skills.

Undergraduate students in The Valley Foundation School of Nursing at San José State University have many opportunities for an enriching education, including:

- Acquiring a liberal and professional education as a foundation for practice and advanced education
- Developing professional role competencies incorporating professional responsibilities and standards, accountability, ethical guidelines, legal mandates and activity within the profession
- Participating in interdisciplinary care through community partnerships, collaborative relationships and use of appropriate resources
- Developing flexible therapeutic nursing practice in a rapidly changing, multicultural health care environment
- Developing critical thinking competencies, including an attitude of inquiry, the use of the nursing process and the research process
- Developing interpersonal skills to develop reciprocal relationships with clients, families, and others involved in health care
- Employing information technology to improve health care delivery and outcome evaluation
- Demonstrating evidenced-based nursing as a foundation for practice.

Career possibilities are: Home Health Care Nurse, Case Manager, Sub-Acute Nurse, Hospital Staff Nurse, Health Clinic Nurse, Advice Nurse, Public Health Nurse, Manager, Administrator, Patient Educator, School Nurse, Primary Care Nurse. Nursing careers vary over a lifetime and permit changing careers within one profession.

Faculty have expertise in many areas such as Community Nursing, Nursing of Children, Nursing of Adults, Nursing of Families, Nursing of the Chronically and Severely Mentally Ill, Nursing of the Elderly, and Nursing of Individuals with Chronic Illness. The faculty have experience in both community-based settings and institutions. The School offers a variety of learning methods for students; a combination of seminars, lectures and laboratories via traditional classrooms, a clinical simulation lab, a variety of clinical settings and the Academic Technology Network (ATN). Use of technology is an emphasis throughout the curriculum. Advisors are available to guide students through the degree program. The Valley Foundation School of Nursing is known for its exemplary retention program. In addition to regular faculty advisors, a faculty member is designated as a Retention Coordinator providing counseling and mentoring, and arranging tutoring and financial aid. Professionals from the area health care systems act as guest lecturers, classroom and clinical faculty, and serve on the School's Advisory Board. Our alumni include a college president, nursing deans, nursing faculty, authors, politicians, entrepreneurs, administrators, managers, primary care providers, quality assurance experts, cost specialists and national and international leaders. In Spring 2011 the program received American Association of Colleges of Nursing CCNE accreditation renewal for the next 10 years.

The Institute for Nursing Research and Practice provides nursing faculty opportunities to develop innovative models for nursing research, evidence-based practice and education. The development and application of new knowledge to the practice of nursing through inquiry are necessary to the growth of the profession and are a responsibility of nurses and nurse educators. Advanced nursing students have opportunities to work with faculty on projects supported by the Institute.

Our baccalaureate-prepared graduates can move directly into graduate study programs for future careers in advanced practice programs such as administrator, teacher, clinical nurse specialist, and nurse practitioner. Our master's and post-master's graduates are advanced practice nurses. Many have earned doctorates, become college or university faculty and are employed in research organizations. Courses are offered to accommodate the time needs of working graduate students.

Undergraduate Admission Procedures

The application to the Undergraduate Nursing major is a 2-step application process.

Students interested in the nursing major should attend a 2 hour group advising session (usually offered monthly). Submit an application to www.csumentor.edu and official transcripts of all previous college work to the Office of Admissions and Records by the posted University deadlines. As of Fall 2010, the University has designated pre-nursing as being an impacted major. Criteria for the impaction are posted on the University web pages under "admissions." Students are admitted as "cohort groups" once they have been formally admitted to the nursing major. (Note: the nursing major application process has supplemental impaction criteria in place.) Students must file a separate application to the nursing major (www.sjsu.edu/nursing).

Prior to applying to the University, students should contact The Valley Foundation School of Nursing for information regarding advisement for entry into the major. Advising is available through individual or monthly group sessions. Refer to the nursing web site at www.sjsu.edu/nursing for more detail, dates, times, and rooms for monthly group advising sessions. The application form for The Valley Foundation School of Nursing is also available on the web site. This is an entirely separate application from the application to the University. All applications must be accompanied by official sealed transcripts of all college work, proof of admission to SJSU, a passing score on the Writing Skills Test, and a score from the entrance examination, the TEAS test. Courses with designated "W" or "WB" are not considered for calculation purposes.

The Valley Foundation School of Nursing has been an impacted major since Spring 2005. Impaction imposes supplemental criteria that all students must meet. Pre-nursing students apply to the nursing major, to be considered as part of an applicant pool.

The Valley Foundation School of Nursing has biannual admission application periods - Spring and Fall. Criteria for eligibility for the applicant cohort pool include:

1. GPA in 30 most recent semester or quarter units equivalents: minimum 3.0.

2. GPA in composite of 5 prerequisite courses (BIOL 065, BIOL 066, MICRO 020, ENGL 001A, and STAT 095): Minimum is 2.75.

3. BIOL 065, BIOL 066, and MICRO 020 must be completed within 5 years of establishing eligibility and passed with a grade of "C" or better. Courses may be repeated only once ("W" and "WB" grades are excluded).

4. A minimum TEAS score [See Nursing web site]. This exam may only be taken two times.

5. GPA of 3.0 in CHEM 030A, CHEM 030B, COMM 020, and ENGL 001B.

Students meeting the above minimum criteria will be ranked according to an impaction score, calculated and weighted from the following three areas:

1. GPA in 30 most recent graded semester or quarter units equivalents. (This scoring excludes any courses that have been taken a second time.)

2. GPA in composite of 5 prerequisite courses (BIOL 065, BIOL 066, MICRO 020, ENGL 001A, STAT 095). For any of these courses that are repeated, the first and second grade will be included in the calculation, unless the second attempt was for Grade Forgiveness (also known as Academic Renewal). These courses can be repeated only once.

3. A minimum score on Test of Essential Academic Skills (TEAS) Test [See Nursing web site]. The TEAS is a test of English, reading comprehension, mathematics, and basic science. It is available through the SJSU Testing Center. Refer to The Valley Foundation School of Nursing Home Page for further information. There will be a fee. A Study and Review Guide is available for purchase online at www.atitesting.com to assist in preparation for the TEAS. Test administration dates (usually offered every 2 months) are posted under Essential Nursing News on The Valley Foundation School of Nursing website: www.sjsu.edu/nursing. Check the website frequently for updates.

In order to join the applicant pool for The Valley Foundation School of Nursing, students should meet the following:

1. Declare prenursing as a major (a prenursing designation also has supplementary entry criteria; see www.sjsu.edu/nursing).

2. Complete each of the 9 prerequisites courses with a grade of "C" or better. These courses may be repeated once ("W" and "WB" grades are excluded). See minimum GPA under "impaction criteria."

3. Pass STAT 095 or equivalent articulated course.

4. Pass the Writing Skills Test (WST) or approved equivalent (check the testing office website at https://testing.sjsu.edu/ for test dates, deadlines, and fees).

5. Pass the TEAS test within 2 attempts and submit the score(s) to SJSU The Valley Foundation School of Nursing (a minimum TEAS score is required for eligibility).

6. United States citizenship or Green Card Permanent Resident (documentation required).

7. Submit an application with documentation of the above 1 through 6. Documentation of prerequisites must be official unopened transcripts submitted to The Valley Foundation School of Nursing. Transcripts submitted for admission to the University are not available to the School of Nursing. A cover check-off sheet must be included with application, along with a completed functional competencies form.

8. Application and documentation deadlines for entry in Fall semester is April 1. Application and documentation deadlines for entry in Spring semester is October 1. Part of the application includes background/drug clearances (see www.sjsu.edu/nursing). All clinical students are screened and must pass a drug and background check procedures prior to acceptance. Specific clinical documentation is required of all nursing students. The clearance of functional competencies is also necessary for admission to the major.

Please note that application requirements and prerequisite courses are subject to change. Interested students should check the nursing web site frequently for updates and changes.

BS - Nursing

Undergraduate Coordinator and Advisor: Dr. Sue Malloy

Programs at SJSU prepare you for professional careers with a baccalaureate degree in Nursing.

The following courses (or their equivalents) are to be completed for the baccalaureate degree. Extended campus facilities include public health departments, home health agencies, sub-acute facilities, skilled nursing facilities, ambulatory care clinics, acute care hospitals, Nurse-Managed Centers and a wide variety of community-based agencies for clinical experience. Students must provide their own transportation to extended campus facilities. Some community agencies require home visits, therefore students must have individual use of an automobile.

Overall requirements: Students must maintain a minimum grade of "C" or better or "Credit" in each nursing course and in all prerequisites and corequisite courses for the nursing major (see admission impaction supplemental criteria for exceptions). Policies are posted on The Valley Foundation School of Nursing website at www.sjsu.edu/nursing.

Semester Units

General Education Requirements 24
Of the 51 units required by the university, 27 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Prerequisites to the Major 32
ENGL 001A (or equivalent), ENGL 001B, COMM 020, CHEM 030A, CHEM 030B, BIOL 065, BIOL 066, MICR 020 and STAT 095

Requirements in the Major 60
NURS 023, NURS 024, NURS 033, NURS 034A, NURS 043, NURS 044, NURS 053, NURS 054, NURS 125, NURS 126, NURS 127A, NURS 127B, NURS 128, NURS 133, NURS 136, NURS 137, NURS 138, NURS 145, NURS 146A, NURS 146B, NURS 147A, NURS 147B and NURS 148A

Support of the Major 12
CHAD 067 (3); NUFS 008, PSYC 001 and HPRF 100W (9)

Total Units Required 130

Note: UNVS 015C may be used in lieu of the statistics course required by this major through the Summer 2014.

Students should be aware that the application requirements and prerequisite courses are subject to change. Interested students should check the nursing web site frequently for updates and changes.

School Audiometrist Certificate

If EDAU 115 and EDAU 170 are completed during the first year of study, students may obtain the California School Audiometrist Certificate. Courses offered by Continuing Education at SJSU, CSU Chico, CSU, Sacramento, CSU, San Bernardino, CSU San Diego, or the University of the Pacific may satisfy requirements to obtain the California School Audiometrist Certificate.

Post Master's School Nurse Credential [currently not being offered]

The Post Master's School Nurse Credential-only program (SNCP) is a 33 unit program leading to the California School Nurse Credential. It does not lead to a university degree; units can be applied to the SJSU MS degree. Students in the SNCP must meet the admission and health requirements. To be eligible for this program, students must have a baccalaureate degree (nursing or non-nursing), a Master's Degree and a current California R.N. license. Additional course work may be required to meet specified content areas for a non-nursing baccalaureate degree and a prerequisite or first-year enrollment requirement is completion of courses necessary to obtain the California School Audiometrist requirement.

The Post Master's SNCP includes 11 units of core classes and 22 units of functional option courses for a total of 33 units plus completion of the requirements for the California Audiometrist Certificate.

Semester Units

Required Core Courses 27

Validation of knowledge and skills in physical and psychosocial assessment with specific populations at risk required prior to enrollment in NURS 206.</ cstyle:>
NURS 200, NURS 202, NURS 204, NURS 206, NURS 270, NURS 272, NURS 274 and HPRF 295

Supportive Courses 9
EDSE 192A or EDSE 235A (3); EDCO 215, EDSE 228A or EDCO 244G (3); EDAU 115 and EDAU 170 (6) or Courses offered by Continuing Education at SJSU, CSU Chico, CSU Sacramento, CSU San Bernardino, CSU San Diego, or the University of the Pacific that satisfy requirements to obtain the California School Audiometrist Certificate (3-4)

Total Units Required 36

Post Masters Nurse Educator Certificate

NURS 214, NURS 212, NURS 216, NURS 266, EDUC 186 or EDUC 272

MS - Nursing

Graduate Coordinator and Advisor: Dr. Phyllis Connolly

Graduate Options

The MS - Nursing has options in:

- Nurse Administrator
- Clinical Nurse Specialist, School Nurse
- Nurse Educator
- Family Nurse Practitioner

Post-Masters Certificate/Credential Preparation:

- Nurse Educator
- Family Nurse Practitioner
- School Nurse

All options are offered only if student enrollment is adequate. Currently there are three certificate programs offered through University Special Sessions. The School Nurse and Family Nurse Practitioner Certificate, Nurse Educator programs require a master's degree in nursing prior to admission.

After earning a baccalaureate degree in Nursing from an accredited program and obtaining San José State University admission, you may enter the master's program with a major in Nursing. If you have graduated from a non-accredited baccalaureate program, prior course work 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. Registered nurses with baccalaureate degrees in disciplines other than nursing are accepted conditionally to provide a specialized course of study prior to taking Master's in Nursing courses. There are a minimum of four undergraduate courses which need to be completed with a grade of "B" or better.

Requirements for Admission to Classified Standing

General university requirements for consideration of admission to classified standing for the master's degree are outlined in this catalog. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape. In addition, the following School requirements apply:

1. Completion of an accredited baccalaureate program in nursing with an upper division major comparable to that offered at San José State University. 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 grade point average of at least 3.0 in the last 60 units of the undergraduate nursing major.

3. Completion of an introductory statistics course which includes an introduction to descriptive, probability and inferential statistics within three years of admission.

4. Completion of an introductory research course.

5. Completion of an economics course equivalent to ECON 1A effective Spring 2007.

6. Evidence of licensure as a Registered Nurse (RN) in the State of California.

7. Satisfactory completion of the CSU baccalaureate graduation requirement in written English; or satisfactory completion, as a graduate student, of the SJSU undergraduate upper division writing requirement by passing the Writing Skills Test (WST) with a grade which allows a waiver; or satisfactorily completing the writing course HPRF 100W.

8. Completion of The Valley Foundation School of Nursing application with all attachments.

9. A statement of purpose which outlines applicant's goals and objectives in seeking degree/credential.

10. Evidence of having met health requirements of the school.

11. Current certification in Cardiopulmonary Resuscitation and evidence of professional liability insurance and health insurance.

12. 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.

13. The Valley Foundation School of Nursing is not accepting students to the School Nurse Program or Post Master Credential 2010-2011. Please contact The Valley Foundation School of Nursing for information on subsequent years at 408-924-3131.

Requirements for Admission to Conditionally Classified Standing

Students whose records show certain deficiencies, but whose professional achievements indicate a promise of success, may be admitted on a conditional basis. To qualify for classified standing, conditions must be met. The appropriate form will be completed by the Graduate Coordinator upon receipt of documentation and sent to the Academic Vice President of Graduate Studies and Research for review.

Requirements for Admission to Candidacy for the MS - Nursing

Admission to candidacy for the MS - Nursing 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 course work completed in graduate standing at other institutions before enrollment here.

2. Have classified status.

3. Have planned a proposed program of study approved by the School Graduate Coordinator and by the Associate Academic Vice President for Graduate Studies and Research.

Requirement for Post Master's School Nurse Credential

The Post Master's School Nurse Credential Program does not confer a degree but does fulfill the requirements for the California School Nurse Credential (SNCP). Graduates of the MS degree School Nurse Clinical Specialist program meet requirements for the California School Nurse Credential. A prerequisite or first-year requirement is completion of courses necessary to obtain the California School Audiometrist Certificate.

Family Nurse Practitioner Program

The Family Nurse Practitioner Program follows the National Organization of Nurse Practitioner Faculty guidelines, fulfills NP requirements for California BRN certification, and meets NP requirements for the American Nurses Credentialing Center national certification examination. The Department is not accepting students to the Family Nurse Practitioner Program in 2010-2011. Please contact The Valley Foundation School of Nursing for information on subsequent years.

Completing Requirements for the MS - Nursing

With approval of an advisor, the minimum program for completing the 36-unit (44 units for FNP) requirement for a MS - Nursing is as follows:

Classified standing in nursing or permission of instructor is prerequisite to all nursing courses listed.

Semester Units

Required Core Courses 14

NURS 204 required only for the Post Master's (FNP) Option.</cstyle:>
NURS 200, NURS 202, NURS 204 and HPRF 295 (11); NURS 297 or NURS 299 (3)

Functional Options 22-27

Nurse Educator Option 25
NURS 212, NURS 214 and NURS 216 (13); NURS 259, EDUC 186 or EDUC 272 (3); EDUC elective (3); NURS 208 and NURS 266 (6)

Nursing Administration Option 22
NURS 236A, NURS 236B and NURS 246 (10); BUS 220 and BUS 285 (6); BUS 286 and NURS 266 (6)

CNS School Nursing Option 22
NURS 206, NURS 270, NURS 272 and NURS 274 (16); EDSE 192A or EDSE 235A (3); EDCO 215, EDSE 228A or EDCO 244G (3)

Family Nurse Practitioner (FNP) Option 27
NURS 248, NURS 250, NURS 252, NURS 253, NURS 254, NURS 256, NURS 258 and NURS 259

Post Master's (FNP) Option 27
NURS 248, NURS 250, NURS 252, NURS 253, NURS 254, NURS 256, NURS 258 and NURS 259

Total Units Required 36-41

Elective courses 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.

A prerequisite or first-year requirement is completion of courses necessary to obtain the California School Audiometrist Certificate. Satisfactory performance on a final written and/or oral comprehensive examination is also required.

The Doctor of Nursing Practice Program

California State University, Fresno (Fresno State) and San José State University are offering a joint post-master's Doctor of Nursing Practice program beginning in the Fall of 2012. Fresno State will be the lead campus.

The DNP is a practice degree designed to prepare nurse leaders and advanced practice nurses for evidence-based practice in patient care, leadership, and educational roles. The culminating experience for this program is a doctoral project, rather than a dissertation.

The purpose of the Doctor of Nursing Practice (DNP) Program is to prepare experts in specialized advanced nursing practice. The DNP program prepares graduates for leadership and clinical roles and to engage in evidence-based inquiry. Graduates may also 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 and coursework will be primarily offered in an online format with occasional intensive sessions held alternately on the Fresno State and San José campuses.

Admission will occur once a year in the Fall. The program follows the cohort model, and there is no part-time option. This is a 5 semester, 37 unit that can be completed in 21 months of full-time study.

Nutrition, Food Science and Packaging Department

Division of Health Professions

College of Applied Sciences and Arts

Central Classroom Building 200
408-924-3100

Professors

Panfilo S. Belo
Clarie B. Hollenbeck
Lucy M. McProud, Chair
Kathryn P. Sucher

Associate Professors

Fritz Yambrach

Assistant Professors

Marjorie R. Freedman
Ashwini R. Wagle

Curricula

BS, Nutritional Science
BS, Nutritional Science, Concentration in Dietetics
BS, Nutritional Science, Concentration in Food Science and Technology
BS, Nutritional Science, Concentration in Packaging
Minor, Nutrition and Food Science
Minor, Nutrition for Physical Performance
Minor, Food Science
Minor, Packaging
MS, Nutritional Science

Introduction

The Nutrition, Food Science and Packaging Department prepares graduates for careers as nutritionists, food scientists, dietitians, and foodservice professionals in the community, educational institutions, hospitals, nutrition, food and research laboratories, business, industry and government agencies.

The Didactic Program in Dietetics is currently granted Accreditation by the Commission on Accreditation for Dietetic Education of The American Dietetic Association, 120 S. Riverside Plaza Suite 2000, Chicago, 60606-6995, (312) 899-4876. The dietetics program qualifies students for admission to ADA accredited internships toward becoming a registered dietitian. The Food Science and Technology concentration curriculum is the only program in Northern California in the California State University system approved by the Institute of Food Technologists.

BS - Nutritional Science

Semester Units

General Education Requirements 27-30
Of the 51 units required by the university, 21-24 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Supporting Courses 20
NUFS 101B, MICR 020, PSYC 001, HPRF 100W and ENVS 001 (17); STAT 095 or HS 067 (3)

Major Requirements 61-66

Major Core 20
NUFS 008, NUFS 031, NUFS 101A, NUFS 103, NUFS 106A, NUFS 139 and PKG 107

Emphasis Requirements 42-46

Select one emphasis.</cstyle:>

Nutrition Science 42
NUFS 108A, NUFS 108L, NUFS 109, NUFS 122, BIOL 065, BIOL 066, CHEM 001A, CHEM 001B, CHEM 008, CHEM 132 and CHEM 132L (37); Complete five units from: NUFS 105, NUFS 106B, NUFS 110A, NUFS 110B, NUFS 118, NUFS 123, NUFS 150, NUFS 194 (5)

Nutrition Education 42
NUFS 104A, NUFS 105, NUFS 111, NUFS 114A, NUFS 124, NUFS 190, NUFS 191, BIOL 021, CHEM 030A, CHEM 030B and HPRF 135 (29); college level counseling course (3); Complete thirteen units from: NUFS 111L, NUFS 113, NUFS 116, NUFS 123, NUFS 134, NUFS 194 (13)

Sports Nutrition 42
NUFS 105, NUFS 108A, NUFS 109, NUFS 123, NUFS 124, NUFS 190, BIOL 066, CHEM 030A, CHEM 030B, CHEM 132, KIN 155 and KIN 162 (38); Complete four units from: NUFS 116, NUFS 106B, NUFS 135, NUFS 114A, NUFS 194, HPRF 135 (4)

Food Management 43
NUFS 020, NUFS 022, NUFS 025, NUFS 104A, NUFS 105, NUFS 111, NUFS 111L, NUFS 112, NUFS 113, NUFS 194, BIOL 021, BUS 020N, BUS 150, BUS 151, CHEM 030A, CHEM 030B, ECON 001A and ECON 001B (40); Complete three units from: NUFS 012, NUFS 023, NUFS 117 (or by advisement) (3)

Environmental Food and Health Specialist 45-46
NUFS 020, NUFS 111, NUFS 111L, NUFS 133, NUFS 150, CHEM 001A, CHEM 001B, CHEM 030B, PHYS 002A, PHYS 002B, MATH 008, HS 161 and POLS 114 (41), BIOL 001, BIOL 002, BIOL 003, BIOL 001A or BIOL 001B (4-5)

Capstone Course 2
NUFS 192

Electives 2-10

Total Units Required 120

Note: UNVS 015C may be used in lieu of the statistics course required by this major through the Summer 2014, except for the emphasis in Food and Health Specialist.

See department for advising. A minor is strongly recommended for each emphasis.

BS - Nutritional Science, Concentration in Dietetics

Semester Units

General Education Requirements 30
Of the 51 units required by the university, 21 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Supporting Courses 35
NUFS 101B (3); BIOL 066, CHEM 001A, CHEM 030B, CHEM 132, CHEM 132L, HPRF 100W, MICR 020 and PSYC 001 (29); STAT 095 or HS 067 (3)

Requirements in the Major 56

Core 14
NUFS 008, NUFS 031, NUFS 101A, NUFS 103 and NUFS 106A

Additional Major Requirements 40
NUFS 106B, NUFS 108A, NUFS 108L, NUFS 109, NUFS 110A, NUFS 110B, NUFS 111, NUFS 111L, NUFS 112, NUFS 113, NUFS 114A, NUFS 135, NUFS 144, NUFS 190 and NUFS 191 (36); Complete four units from: NUFS 020, NUFS 104A, NUFS 105, NUFS 116, NUFS 123, NUFS 124, NUFS 134, NUFS 180, NUFS 194, PKG 107 (4)

Capstone Course 2
NUFS 192

Total Units Required 123

Note: UNVS 015C may be used in lieu of the statistics course required by this major through the Summer 2014.

BS - Nutritional Science, Concentration in Food Science and Technology

Semester Units

General Education Requirements 27
Of the 51 units required by the university, 24 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Supporting Courses 50
COMM 020, CHEM 055 and CHEM 160 (11); BIOL 010, CHEM 001A, CHEM 001B, CHEM 008, CHEM 009, CHEM 135 and HPRF 100W (24); STAT 095 or HS 067 (3); MATH 030 (3); MICR 020 and PHYS 002A (9)

Requirements in the Major 45

Core 11
NUFS 008, NUFS 031, NUFS 101A and NUFS 103

Additional Major Requirements 32
NUFS 117, NUFS 118, NUFS 122, NUFS 133, NUFS 139, NUFS 144, NUFS 150, NUFS 155, PKG 107, MICR 123, MICR 123L and BUS 186

Capstone Course 2
NUFS 192

Total Units Required 124

BS - Nutritional Science, Concentration in Packaging

Semester Units

General Education Requirements 36
Of the 51 units required by the university, 15 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 30
CHEM 030A and CHEM 030B (*) (6); MICR 020 (**) (5); HPRF 100W (3); STAT 095 or HS 067 (3); PHYS 002A, MATH 070, MATH 071 and NUFS 101B (13)

Major Requirements 44
NUFS 031, NUFS 103, NUFS 133, NUFS 139, NUFS 155 and NUFS 192 (17); PKG 107, PKG 141A, PKG 141B, PKG 146, PKG 156, PKG 158, PKG 159, PKG 169 and PKG 170 (27)

Approved Electives 8
Complete eight units from: NUFS 021, NUFS 101A, NUFS 117, NUFS 118, NUFS 122, NUFS 150, BUS 130, DSID 129, other courses by advisement

Total Units Required 120

*May substitute: CHEM 001A and CHEM 030B (8 units) or CHEM 001B and CHEM 008 (13 units) for CHEM 030A and CHEM 030B.

**May substitute MICR 020 (5 units) for NUFS 020.

Minor - Nutrition and Food Science

Semester Units

Required Courses 9
NUFS 008 or NUFS 009 (3); NUFS 105 (3); NUFS 139 or NUFS 144 (3)

Additional Courses 6
Complete six units from: NUFS 001A, NUFS 020, NUFS 022, NUFS 104A, NUFS 114B, NUFS 116, NUFS 123, NUFS 124, NUFS 134, NUFS 194, PKG 169 (or other courses with advisor approval)

Total Units Required 15

Minor - Nutrition for Physical Performance

Semester Units

NUFS 008, NUFS 105, NUFS 106A, NUFS 123 and KIN 162 (15)

Total Units Required 15

If KIN 162 is required by the major, select another nutrition course with approval of the advisor.

Minor - Food Science

Semester Units

Core Courses 6
NUFS 001A and NUFS 115

Additional Courses 9
Complete nine units from: NUFS 101A, NUFS 103, NUFS 117, NUFS 118, NUFS 133, NUFS 150, NUFS 155, NUFS 180

Total Units Required 15

Minor - Packaging

Semester Units

Required Courses 9
PKG 107, PKG 141A and PKG 141B

Approved Electives 6
Complete six units from: PKG 146, PKG 156, PKG 158, PKG 159, PKG 169, PKG 170

Total Units Required 15

MS - Nutritional Science

Our Master of Science (MS) program is designed to meet the needs of the student who has a baccalaureate degree and who wishes advanced preparation in nutrition science, nutrition education, geriatric nutrition, food science and technology, foodservice/restaurant management and packaging. The program is intended to prepare candidates to assume leadership roles in their profession and community, and to provide the opportunity to acquire a foundation for doctoral study. Our MS graduates have earned doctorates, become college or university faculty, been employed in private, federal and state research institutions, or 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 American Dietetic Association toward becoming a registered dietitian. Courses are scheduled to accommodate the time needs of working graduate students.

Admission Requirements

General university requirements for consideration of admission to classified standing for the Master's degree are outlined in this catalog.

Requirements for Admission to Classified Standing

Students seeking admission to classified standing in the Nutrition, Food Science and Packaging Department must first comply with university requirements for admission as outlined in this catalog. In addition, applicants must contact the department for materials to be used by the department's Graduate Committee in selecting students for admission to classified standing. All prospective students must submit: a letter of intent; three letters of recommendation; and transcripts from all of the institutions attended. A selection committee will determine eligibility on the basis of information made available. Criteria include:

1. A BA or BS degree in Nutritional Science, Food Science, Foodservice Management, or equivalent.

2. A grade point average of 3.0 in upper division courses.

3. Evidence of potential ability to do professional work.

Requirements for Admission to Conditionally Classified Standing

Students seeking an MS degree in Nutritional Science who meet requirements for admission to the Graduate Division, but lack an undergraduate degree in Nutritional Science, Food Science, Foodservice Management, or equivalent and have little or no professional experience, may apply for conditionally classified standing in the department. Applicants must contact the department for materials to be used by the department's Graduate Committee in determining eligibility for the program. All prospective students must submit: a letter of intent; three letters of recommendation from individuals who can testify to the prospective student's potential for success in nutritional science and to the individual's scholastic ability; and transcripts from all of the institutions attended. The decision to accept the student for study in this program will be made by a selection committee. Criteria include:

1. BA or BS degree.

2. A grade point average of 3.0 in upper division courses.

3. Graduate approval upon the completion of courses to correct deficiencies in undergraduate courses.

Requirements for Admission to Candidacy for the MS - Nutritional Science

Admission 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 Graduate Committee. In general, students will be recommended for candidacy when:

1. They attain classified graduate standing.

2. They demonstrate aptitude for professional work in an area of specialization as measured by academic performance and appraisals by instructors and other appropriate means.

3. They show a satisfactory background in the profession of nutrition and food science by having completed the program requirements.

4. They have a minimum 3.0 grade point average in all post-graduate work.

5. They have successfully passed appropriate graduate competency exams.

6. They have selected a graduate advisor, identified the graduate program objective, and have an approved program signed by the faculty advisor, departmental graduate coordinator, and the university Graduate Committee.

7. They have met the English writing requirement. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Studies and Research website at www.sjsu.edu/gradstudies.

Degree Requirements

Maintenance of a 3.0 GPA is necessary. A comprehensive final oral examination is required and will be of such scope and manner as determined by the student's graduate committee.

Plan A (with Thesis)

The student is required to complete the 10 units of core courses. Fifteen or more units must be approved 200-level courses including NUFS 299 Master's Thesis. A maximum of 3 units Special Studies (NUFS 298) is allowed. See thesis information for steps in completing thesis. A bound copy of Plan A Thesis is submitted to the Nutrition, Food Science and Packaging Department and to the student's thesis advisor.

Plan B (with Project)

The student is required to complete the 10 units of core courses. Fifteen or more units must be approved 200-level courses. A written project (NUFS 298) to be submitted in publication format is required. The purpose of Plan B is to provide breadth, rather than specialization.

	Semester Units
Core Courses NUFS 201 and NUFS 217; NUFS 216 or NUFS 242; HPRF 295	10
Choose One Plan	20
Plan A	20
Graduate Program Emphasis Courses	14
Thesis NUFS 299	6
Plan B	20
Graduate Program Emphasis Courses	17-19
Project NUFS 298	1-3
Total Units Required	30

A list of courses recommended for graduate program emphases in nutritional science, food science, nutritional education, geriatric nutrition, packaging, and foodservice management is available from the Nutrition, Food Science, and Packaging Department.

A Dietetic Internship at San José State University is currently granted Accreditation by the Commission on Accreditation for Dietetics Education of The American Dietetic Association, (www.eatright.org) 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995, 800-877-1600 ext. 5400 and is available for students who wish to qualify for Registered Dietitian status. See Nutrition, Food Science and Packaging Department for eligibility requirements.

Occupational Therapy Department

College of Applied Sciences and Arts

Division of Health Professions

Central Classroom Building 203
408-924-3070
www.sjsu.edu/occupationaltherapy

Professors

Elizabeth Cara
Anne MacRae
Heidi McHugh Pendleton, Chair
Pamela Richardson
Winifred Schultz-Krohn
Kathleen Barker Schwartz

Associate Professors

Carolyn Glogoski

Assistant Professors

Lynne Andonian
Sheama Krishnagiri
Jerilyn Smith

Curricula

BS, Occupational Therapy
MS, Occupational Therapy (Pattern I)
MS, Occupational Therapy (Pattern II)

Introduction

The Occupational Therapy Program at San José State University, founded in 1943, provides an education that enables its students to become competent clinicians who are effective problem solvers and communicators, and active leaders prepared to work in a culturally diverse society. The strong emphasis on teaching and advising assures that the program retains its reputation for graduating excellent practitioners. Graduates of the program are in high demand and are hired by private and public health care institutions and agencies.

The Student Occupational Therapy Association (SOTA) provides social, educational and leadership opportunities for students as they progress through the program. Students study with faculty who are nationally recognized for their excellence in such areas as: adolescent and community mental health, gerontology, independent living skills, pediatrics, psychological adjustment to disability, work evaluation and leadership.

The Occupational Therapy Program at San José State University is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE), 4720 Montgomery Lane, Bethesda MD 20814-3425, (301) 652-2682. It is the oldest accredited Occupational Therapy program in the California State University system.

Admission Procedures

Pattern I

BS - Occupational Therapy

The Pattern I curriculum is designed for undergraduate students. It enables them to obtain the education and degrees necessary to be eligible to practice as an occupational Therapist. Once the M.S. degree in Occupational Therapy is completed, 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.

A new student declares a major of B.S., Occupational Therapy. Applications are accepted beginning October 1 for the subsequent Fall semester. It is important that students apply as soon as possible. For current admission procedures, please visit www.sjsu.edu/ot

Prospective students who possess a baccalaureate degree and are interested in a degree in occupational therapy are advised to contact the Department of Occupational Therapy prior to submitting an application to San José State University as an occupational therapy major.

Once admitted to San José State University, students must submit the following documents directly to the Department of Occupational Therapy: 1) transcripts of all higher education institutions attended, 2) verification of volunteer or work experience on the departmental form, and 3) departmental application form.

Requirements for enrollment in the Occupational Therapy Courses

1. Acceptance to the University as an Occupational Therapy major

2. Completion of all lower division general education requirements

3. Documentation of the successful completion of 80 hours of volunteer work

a. 40 hours under the supervision of an occupational therapist

b. 40 hours under the supervision of a community agency supervisor

4. Volunteer hours should be completed within 3 years of enrollment

5. Completion of required courses for the major

6. Overall SJSU GPA of 2.8.

7. Completion of departmental Personal Data form

Required Courses for the Major

Student must earn a "C" (2.0) in each of the following courses, and may repeat each course only once. The courses must be completed within 7 years of enrollment: Human Anatomy with a lab (BIOL 65); Physiology with a lab (BIOL 66); Neuroanatomy (BIOL 109), Elementary Physics (lab is not required) (PHYS 1); General Psychology (PSYC 1); Abnormal Psychology (PSYC 110) or a community college course, Social Problems (SOCS 80 or ANTH 011), Statistics (STAT 95 or HS 67). Studio Arts or Skills Course (such as ART 46): a college-level course such as ceramics, painting, weaving, or woodworking that requires the use of tools and materials to create a product. For questions related to the transfer of credits, please refer to the World Wide Web Page: http://artic.sjsu.edu. The Catalog is available at http://info.sjsu.edu.

Departmental Honors

Departmental Honors in Occupational Therapy can be awarded to a student who has achieved a G.P.A. of 3.0 overall in the university and 3.5 in the major. The student must take and pass either OCTH 185 or OCTH 180H. Students will participate in self-directed learning, critical thinking, and problem solving projects under the direction of a faculty member.

Certification and Registration

As of 2007, all new graduates will be required to have an entry-level post baccalaureate degree in order to sit for the national certification examination to practice as an OTR (occupational therapist, registered).

Pattern I.

After successful completion of the Master of Science program in Occupational Therapy, students are eligible to sit for the national certification examination. Successful completion of the examination qualifies the candidate to apply to the following boards for national certification as an Occupational Therapist, Registered (OTR) and for California Licensing. National Board for Certification in Occupational Therapy (NBCOT) 800 South Frederick Avenue, Suite 200 Gaithersberg, MD 20877-4150, California Board of Occupational Therapy 444 North 3rd Street, Suite 410 Sacramento, CA 95811 916-322-3394.

A felony conviction may affect a graduate's ability to sit for the NBCOT certification examination and may preclude attainment of state licensure.

BS - Occupational Therapy

Semester Units

General Education Requirements 36-39
Of the 51 units required by the university, 12-15 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Prerequisites for the Major 27
BIOL 065 (*), BIOL 066, PSYC 001, PSYC 110 and PHYS 001 (18); STAT 095 or HS 067 (3); SOCI 080 or ANTH 011 (3); One Studio Arts course (3)

Requirements in the Major 42
OCTH 108, OCTH 110, OCTH 113, OCTH 115, OCTH 120, OCTH 122, OCTH 126, OCTH 130, OCTH 131, OCTH 132, OCTH 133, OCTH 134, OCTH 136 and OCTH 156

Electives 10-13
May include a minor selected in consultation with advisor.

Total Units Required 120

Note: UNVS 015C may be used in lieu of the statistics course required by this major through the Summer 2014.

*Although a corresponding transfer course may indicate equivalency with SJSU's BIOL 065, Human Anatomy, students who have not completed an anatomy course with adequate laboratory experience will be required to take SJSU's BIOL 065L, Anatomy Lab for Transfer Students.

MS - Occupational Therapy Pattern I

Semester Units

Prerequisites
Minimum 3.0 GPA in the first 3 semesters of OT major undergraduate courses and a cumulative 3.0 GPA since enrollment in OT program.

Occupational Therapy Core Courses 28
OCTH 202, OCTH 204, OCTH 208, OCTH 210, OCTH 220, OCTH 230, OCTH 235 and OCTH 244 (25); OCTH 295A (3)

Thesis or Project 3
OCTH 295B

Total Units Required 31

Note: Following completion of the academic coursework (31 units), students must be enrolled in and complete (with a "CR") two Fieldwork Courses, OCTH 201A and OCTH 201B, prior to the University awarding the Master's Degree in Occupational Therapy.

The purpose of OCTH 295B is to provide independent inquiry in advanced topics in occupational therapy practice, including theoretical and clinical problems. The Comprehensive Master's project requires critical analysis and synthesis of information gathered, crafted into a publishable paper or poster and oral presentation.

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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at http://www.sjsu.edu/gape/. Students in their graduate year must maintain a 3.0 GPA.

MS - Occupational Therapy Pattern II

Admission Procedures

The Pattern II curriculum 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 completed, 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 beginning October 1 for the subsequent Fall semester. It is important that students apply as early as possible.

Admission to Classified Graduate Standing

The following prerequisites must be met:

1. Cumulative GPA of 3.0 (on 4.0 scale) in upper division courses and prerequisite courses.

2. Minimum of 100 hours volunteer experience or equivalent paid work experience in occupational therapy, verified by supervisor on Evaluation Form for Volunteer Experience available from the Department of Occupational Therapy and submitted at the time of application.

3. Completion of Student Information Form available from the Department of Occupational Therapy.

4. Human Anatomy with dissection laboratory, 4 semester units or 5 quarter units.

5. Physiology with laboratory, 4 semester units or 5 quarter units.

6. Introductory psychology course or acceptable upper division psychology course as substitute, 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. One college level skills course 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 or 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.

11. Neuroanatomy - May be taken on SJSU campus or online. Refer to Biology Department's webpage: www.sjsu.edu/depts/Biology and check on "News and Events", 3 semester units or 4 quarter units.

12. Evidence of understanding of occupational therapy and defined career goals in relation to that 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 (#3 above), transcripts of all previous work submitted and any correspondence.

14. Acceptable score on the general aptitude portion of the Graduate Record Examination (combined score of 1000 total, verbal 450 and writing 3.5 is required) or the Miller Analogies (cut-off score 400) if preferred. Note: Scores must be sent to both the Department of Occupational Therapy, and the University.

15. 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.

16. Personal interview by Graduate Committee may be requested. If so, the student will be notified. If transportation, cost, and time are prohibitive, interview can be arranged with a designated representative in the applicant's geographical area.

All prerequisite courses should be completed before acceptance into the program. All transcripts must be sent to the Department of Occupational Therapy, in addition to the University. For current admission procedures, please visit http://www.sjsu.edu/occupationaltherapy/.

These requirements exist for all students holding baccalaureate degrees in other disciplines. The department reviews completed files and makes recommendations for acceptance or denial to the SJSU Admissions Office.

	Semester Units
Prerequisites OCTH 120, OCTH 122, OCTH 126, OCTH 130, OCTH 131, OCTH 132, OCTH 133, OCTH 134 and OCTH 136	27
Occupational Therapy Core Courses OCTH 204, OCTH 206, OCTH 208, OCTH 210, OCTH 220, OCTH 230, OCTH 235, OCTH 244 and OCTH 295A	28
Thesis or Project OCTH 295B	3
Total Units Required	58

Note: Following completion of the academic coursework (58 units), students must be enrolled in and complete (with a "CR") two Fieldwork Courses, OCTH 201A and OCTH 201B, prior to the University awarding the Master's Degree in Occupational Therapy.

The purpose of OCTH 295B is to provide independent inquiry in advanced topics in occupational therapy practice, including theoretical and clinical problems. The Comprehensive Master's project requires critical analysis and synthesis of information gathered, crafted into a publishable paper or poster and oral presentation.

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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at http://www.sjsu.edu/gape/. Students must maintain a 3.0 GPA to remain in the MS Pattern II program.

Philosophy Department

College of Humanities and the Arts

Faculty Office Building 201
408-924-4468

Professors

Peter Hadreas
Thomas Leddy
Tommy Lee Lott
Rita C. Manning, Chair
Bo Mou
William H. Shaw
Richard L. Tieszen

Associate Professors

Karin Brown
Carlos A. Sanchez
Janet Stemwedel
Anand Vaidya

Curricula

BA, Philosophy
Minor, Philosophy
MA, Philosophy

Introduction

The principal emphasis of the department in its undergraduate programs is on a liberal arts education. Philosophy is fundamentally an adventure of the mind. Philosophy majors read and discuss the ideas generated by some of the greatest thinkers in history. The student will also learn to look at contemporary theoretical 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 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.

A philosophy minor is compatible with almost any other major and is especially complementary to such occupational majors as nursing, psychology, business, engineering, journalism and administration of justice.

The graduate program leads to the MA. It forms the foundation for doctoral study, prepares the candidate for teaching philosophy at the community college level, provides an opportunity for the application of philosophy, and offers an opportunity for continued personal development and education.

BA - Philosophy

	Semester Units
General Education Requirements Of the 51 units required by the university, 9 may be satisfied by specified major and support requirements. Consult major advisor for details.	42
American Institutions Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.	(6)
Physical Education	2
Requirements in the Major PHIL 009, PHIL 157 or (with permission of advisor) PHIL 057 (3); PHIL 070A and either PHIL 070B or PHIL 070C (6); Eight upper division courses, one of which must be from the PHIL 190 or PHIL 290 series, and one of which must be PHIL 108, PHIL 111, PHIL 119, PHIL 122, PHIL 126, PHIL 132, PHIL 133, or PHIL 155 (24)	33
Electives	43
Total Units Required	120

Minor - Philosophy

18 units are on advisement. The selection of courses should 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. Minimum 9 units of upper division.

	Semester Units
18 units required, on advisement, of which 9 units will be upper division	
Total Units Required	18

MA - Philosophy

Advisor: Dr. Noam Cook

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:

1. 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.

2. The average grade received in the 18 units is at least a "B".

3. Three letters of recommendation have been submitted.

Admission to Conditionally Classified Standing

Applicants who meet 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 Admission to Candidacy for the MA - Philosophy

The basic requirements for admission to candidacy for the MA - Philosophy are outlined in detail in the Academic Requirements section of this catalog. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Studies and Research website at www.sjsu.edu/gape.

Completing Requirements

Plan A - Thesis

Designed for students who wish to do a thesis.

Plan B - Reading Intensive

Designed for students who wish to do a guided, individualized reading project.

Plan C - Applied Philosophy Project

Designed for students who wish to do a project.

	Semester Units
Required Core Courses PHIL 290, PHIL 291 and PHIL 292; PHIL 157 or PHIL 293	12
Elective Courses 100- or 200-level courses within the department (one or more of 290, 291, 292, and 293 may be repeated as electives when the course content is different)	12
Comprehensive Exam	
taken after the bulk of core and elective courses are completed</cstyle:>	
Choose One Plan	6
Plan A (Thesis) 200-level course (on advisement) and PHIL 299	6
Plan B (Reading Intensive) 200-level course (on advisement) and PHIL 298	6
Plan C (With Applied Philosophy Project) 200-level course (on advisement) and PHIL 299	6
Total Units Required	30

Physics and Astronomy Department

College of Science

Science Building 148
408-924-5210

Professors

Ramendra D. Bahuguna
Joseph F. Becker
Carel Boekema
Jerome Finkelstein
Alejandro L. Garcia
Brian W. Holmes
Michael J. Kaufman, Chair
Lui Lam
Kiumars Parvin

Associate Professors

Natalie Batalha
Peter T. Beyersdorf
Monika E. Kress
Kenneth Wharton

Curricula

BA, Physics
BA, Physics, Preparation for Teaching
BS, Physics
Minor, Physics
Minor, Astronomy
MS, Physics
MS, Physics, Concentration in Computational Physics
MS, Physics, Concentration in Modern Optics

Introduction

Physicists invented the semiconductor, the laser, the electron microscope, CAT and MRI imaging, superconductors and the atomic force microscope. They have key roles in the design and operation of the spacecraft that explore our solar system and the constellation of earth satellites we depend upon for communications, navigation and environmental monitoring. Physicists develop electronic and optical instrumentation and the associated computer networks used in modern laboratories and manufacturing facilities.

The physics program at SJSU includes a Bachelor of Science (BS) degree that prepares students for professional careers in applied physics and for graduate study in science and engineering, a Bachelor of Arts (BA) degree which provides a strong foundation in physics while allowing sufficient electives for a student to pursue a second concentration (science education, for example), and a Master of Science (MS) degree. Students may obtain current information on these degrees by contacting advisors through the department office, 408-924-5210.

SJSU physics faculty have expertise in lasers and optics, computational physics, condensed matter, and astronomy. External funding for sponsored research averages about 1.8 million per year. Physics students are active participants in research programs on campus and at nearby national laboratories.

BA - Physics

This 120-unit program 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, engineering or a second 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).

	Semester Units
General Education Requirements Of the 51 units required by the university, 9 may be satisfied by specified major and support requirements. Consult major advisor for details.	42
American Institutions Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.	(6)
Physical Education	2
Major Requirements PHYS 050, PHYS 051 and PHYS 052 (12) or PHYS 070, PHYS 071 and PHYS 072 (12); PHYS 105A, PHYS 110A, PHYS 120A, PHYS 122, PHYS 140 and PHYS 160 (18); Additional units of upper division physics lab (2); Additional units in upper division physics or astrophysics, or advisor-approved upper division electives (9)	41
Major Supporting Requirements CHEM 001A and CHEM 001B (10); MATH 030, MATH 031, MATH 032 and MATH 133A (13); three additional units of upper division mathematics (3)	26
Electives	9
Total Units Required	120

BA - Physics, Preparation for Teaching

This major is designed for students interested in teaching science in high school or middle school. The following course work satisfies San José State University's requirements for a BA in Physics. In addition, this program is approved by the California Commission on Teacher Credentialing (CCTC) as subject matter preparation for a single subject credential in science with a physics concentration.

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 index) for information on application and admission to credential programs.

	Semester Units
General Education Requirements Of the 51 units required by the university, 18 may be satisfied by specified major and support requirements. Consult major advisor for details.	33
American Institutions Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.	(6)
Physical Education	2
Preparation for the Major and Supporting Courses BIOL 020 and BIOL 021 (6); CHEM 001A, CHEM 001B and CHEM 120S (11); GEOL 103 (3); GEOL 105 or METR 112 (3); MATH 030, MATH 031 and MATH 032 (10); SCI 110 and SCED 175 (4); PHIL 133 (3)	40
Requirements in the Major PHYS 050, PHYS 051 and PHYS 052 (12) or PHYS 070, PHYS 071 and PHYS 072 (12); PHYS 105A, PHYS 110A, PHYS 120A, PHYS 122, PHYS 140, PHYS 158, PHYS 160, ASTR 101 and ENGL 100W (or any science 100W course) (27); Additional units of upper division physics lab (2); Additional units in upper division physics or astrophysics, or advisor-approved upper division electives (3)	44
Electives	1
Total Units Required	120

BS - Physics

This 120-unit program prepares students for professional positions in applied physics and research or for graduate study at the PhD level (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).

Semester Units

General Education Requirements 42
Of the 51 units required by the university, 9 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Major Requirements 35
PHYS 105A, PHYS 105B, PHYS 110A, PHYS 110B, PHYS 120A, PHYS 122, PHYS 140, PHYS 160 and PHYS 163 (27); Additional units of upper division physics lab (2); Additional units of advisor-approved physics or astrophysics upper division electives (6)

Major Supporting Requirements 41
PHYS 050, PHYS 051 and PHYS 052 (12) or PHYS 070, PHYS 071 and PHYS 072 (12); CHEM 001A and CHEM 001B (10); MATH 030, MATH 031, MATH 032, MATH 112, MATH 129A and MATH 133A (19)

Total Units Required 120

Minor - Astronomy

The Astronomy minor offered by the Department of Physics requires completion of the physics courses PHYS 50, PHYS 51, PHYS 52 (or their equivalents and the astronomy courses ASTR 117A, ASTR 117B and ASTR 155 taken at San José State University with a grade of "C" (2.0 GPA) or better.

Minor - Physics

A physics minor to accompany a major in some other field is offered. A physics minor is 18 units of physics which must include 6 units of upper division physics or astrophysics courses taken at San José State University with a "C" (2.0) average or better.

Graduate Programs in Physics

Requirements for Admission to Classified Standing

Minimum requirements for admission to the Graduate Division are outlined in the Admissions section of this catalog. The student must also have completed at least 24 semester units of upper division physics, or courses in related fields approved by the Physics Department graduate advisor.

Requirements for Admission to Conditionally Classified Standing

Students who meet minimum requirements for admission to the Graduate Division but who lack adequate preparation in physics may be admitted to conditionally classified standing. Students in conditionally classified standing will normally concentrate on undergraduate physics, but may enroll in any graduate course in physics for which they have the prerequisites.

Requirements for Admission to Candidacy for the Master's Degree

Students seeking admission to candidacy must meet the all-university requirements outlined in the Academic Requirements section of this catalog. In addition, students should also achieve a minimum score of 550 on the physics portion of the Graduate Record Exam (GRE).

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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Studies and Research website at www.sjsu.edu/gape. Competency in written English can also be demonstrated by passing either a 100W course or the waiver exam.

MS - Physics

Graduate Advisor: Dr. Peter Beyersdorf

Semester Units

Plan A (with Thesis) 30
PHYS 205, PHYS 210, PHYS 230, PHYS 260, PHYS 263A and two other letter-graded graduate physics courses (with a "B" average or better)
21
PHYS 298 and PHYS 299 2-7
100- or 200-level course electives in mathematics, science, and engineering, chosen with the approval of the graduate advisor (a maximum of seven CR/NC units is permitted) 2-7

Plan B (without Thesis) 30
Requirements for Plan B are identical to Plan A except that PHYS 298 and PHYS 299 are not required and 9 units of advisor approved electives must be completed.

Total Units Required 30

MS - Physics, Concentration in Computational Physics

The goal of this concentration is to give the candidate a thorough grounding in physics, computer programming and numerical methods. All candidates are required to complete a project or a thesis in which they apply computer-oriented techniques to physics problems.

Semester Units

Physics Courses 18
PHYS 205, PHYS 210, PHYS 230, PHYS 240, PHYS 263A and one other letter-graded graduate physics course (with a "B" average or better)

Mathematics Courses 9
MATH 143C or MATH 143M, MATH 243B and an advisor-approved 200-level course in mathematics or physics

Project or Thesis 3
PHYS 298 or PHYS 299

Total Units Required 30

MS - Physics, Concentration in Modern Optics

The students in this concentration receive instruction in fundamental areas of physics and gain experience and knowledge in a wide range of subjects related to Modern Optics. All candidates are required to complete a thesis including the defense (Plan A) or take an oral comprehensive examination as culminating experience (Plan B)

Semester Units

Core Courses 20
PHYS 120C, PHYS 168, PHYS 205, PHYS 210, PHYS 230, PHYS 258 and PHYS 263A

Plan A (With Thesis) 10
PHYS 120D or PHYS 220E (2); PHYS 298 (2); PHYS 299 (3); Complete one course from: PHYS 208, PHYS 248, PHYS 268 (3)

Plan B (Without Thesis) 10
PHYS 120D (2); PHYS 220E (2); Complete two courses from: PHYS 208, PHYS 248, PHYS 268 (6)

Total Units Required 30

Political Science Department

College of Social Sciences

Clark Hall 471
408-924-5550

Professors

James C. Brent, Chair
Terry L. Christensen
Constantine Danopoulos
Frances L. Edwards
Peter J. Haas
Kenneth B. Peter

Associate Professors

Cobie Kwasi Harris
Kenneth Nuger
Lawrence Quill

Assistant Professors

Melinda Jackson
Karthika Sasikumar

Curricula

BA, Political Science
Minor, Political Science
Minor, Public Administration and Public Policy
MPA, Master of Public Administration

Introduction

Political science majors study the public issues of the day as well as the timeless issues of government, public policy and the political process as preparation for a wide variety of careers. Our courses cover the full spectrum of political science, from U.S. politics and public administration to public law, comparative politics, international relations and political theory. Faculty members are experts in each of these areas, and are noted for their scholarship, real-world political experience and dedication to teaching. All of our classes are taught by professors - not graduate assistants - and classes are small enough for faculty to get to know students and give personal attention to the development of their analytical and communication skills.

SJSU's Political Science Department features excellent personal advising, an extensive internship program, a Model United Nations, and annual trips to the California Supreme Court and the state Capitol. We offer a number of scholarships exclusively for political science majors as well as funded internships in Sacramento and Washington, D.C.

The study of political science prepares students for a variety of careers including the law, teaching, government service, legislative staffing, political consulting, interest group representation, international relations and business, nonprofit and other organizations as well as for graduate school. See our web page for a list of the occupations of our many successful graduates.

The department also offers a graduate program in public administration to prepare students for administrative and professional careers in public service. The Public Administration program also offers an option to specialize in emergency management.

Our advisors assist students in designing a BA in Political Science to meet their individual interests, needs and goals. Students choose their own advisors in political science so they can be sure to have an advisor who shares their special area of interest, whether it is international relations, comparative politics, U.S. politics or political theory. Special advisors are available for students aiming at careers in law, teaching and public administration. New students are welcome to talk with any faculty member or with the department chair as their initial advisor. See our web page for names, office hours and phone numbers.

Only a few specific courses are required for a political science major - students are allowed lots of choices for the rest so they can focus on areas of politics that interest them most or fit best with their career goals. Students may take a wide variety of political science courses to complete their major, or may choose a career-oriented focus such as:

Practical Politics: a selection of courses recommended for careers in politics, including government, legislative staffing, campaigns and interest group or corporate representation.

Public Administration: for students interested in careers in managing or analyzing government for nonprofit programs and organizations.

International Relations: for students who wish to pursue professional international careers.

Law: for students planning careers in law.

Political Thought: for students aiming at graduate school in political theory or desiring an especially strong liberal arts education.

Any questions? Phone us at 408-924-5550 or check us out on the World Wide Web at http://www.sjsu.edu/polisci/. Our office is open until 5:00 p.m. most days and our friendly, efficient staff, renowned for their problem-solving skills, will answer your questions or put you in contact with an advisor who can give you the assistance you need.

BA - Political Science

The BA - 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.

Semester Units

General Education Requirements 51

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Requirements in the Major 42

Lower Division Core 12
POLS 001, POLS 002, POLS 003 and POLS 004

Upper Division Requirements 30

Area Requirements 12

Complete 12 units from the following. One course from each of the four fields is required.</cstyle:>

U.S. Government and Politics: POLS 102, POLS 103, POLS 105, POLS 106, POLS 107, POLS 108, POLS 114, POLS 122, POLS 130 3

Comparative Politics: POLS 140, POLS 141, POLS 142, POLS 144, POLS 145, POLS 146, POLS 147, POLS 148, POLS 149 3

International Relations: POLS 152A, POLS 154, POLS 155 3

Political Thought: POLS 160A, POLS 160B, POLS 160C, POLS 163 3

Additional Courses 18

Upper Division Courses 12
Four additional upper division courses from POLS 102-199.

Political Inquiry 3
POLS 195A (taken as junior)

Capstone Course 3
POLS 190 (taken as senior)

Electives 25
Students may choose Political Science or other electives.

Total Units Required 120

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, an 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.

Minor - Political Science

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 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. A special department minor advisor helps 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:

Semester Units

Lower Division Courses 6
POLS 001 (3) and POLS 002, POLS 003 or POLS 004 (3)

Upper Division Electives 12
Any four courses from POLS 102-199

Total Units Required 18

Minor - Public Administration and Public Policy

Semester Units

Preparation and Support for the Minor 3
POLS 001 (or equivalent)

Minor Requirements 15
POLS 114 and POLS 130 (6); Complete three courses from: POLS 102, POLS 103, POLS 121A, POLS 149, POLS 181 (9)

Total Units Required 18

MPA - Master of Public Administration

MPA Director: Frances Edwards

The program leads to the professional degree of Master of Public Administration. 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 or on weekends. Alumni assist with orientation and mentoring activities.

The MPA program 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 behavior 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 decision situations, collect relevant 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
- Apply computers to public administration problems

The MPA offers two program tracks. The general management track is for persons interested in preparing themselves for leadership roles and senior management positions in public sector agencies and not-for-profit organizations. The second program track is a concentration in emergency management.

Requirements for Admission to Classified Standing

Minimum requirements for admission to the Graduate Division are outlined in this catalog. Students will be granted classified graduate standing in public administration upon the fulfillment of the following requirements:

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, economics and statistics from an accredited institution and competency in spreadsheet use. Deficiencies in preparation must be removed before admission to candidacy and before completion of 12 hours of MPA courses, typically four courses. Transcripts for the baccalaureate and for all prerequisites must be sent directly to Graduate Admissions, not to the department.

Grades

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. In addition, applicants should submit evidence of professional development.

Resumé and Essay

A resumé must be submitted that demonstrates professional experience and career growth.

In addition to a resume, a career interest essay providing biographical and career interest information should be sent to: MPA Director c/o Political Science Department; One Washington Square, San José, CA 95192-0119

TOEFL Examination

Foreign students must submit scores from the Test of English as a Foreign Language. A minimum score of 575 is required.

Requirements for Admission to Conditionally Classified Standing

In unusual cases, applicants who are otherwise qualified, but who lack some prerequisites, will be admitted to conditionally classified standing. Conditionally classified students need to fulfill the conditions for classified standing before they complete twelve units of work in the MPA program.

Requirements for Admission to Candidacy

Students must apply for admission to candidacy before the last semester of their graduate program. In addition to meeting the university-wide requirements for admission to candidacy as outlined in this catalog, applicants must have submitted an approved program for the degree. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape. Within the program, PADM 210 meets the university competency in written English requirement.

Completing Requirements for the Master of Public Administration Degree

As soon as students are admitted to classified standing, they should meet with an advisor to draft an interim program itemizing 36 units of course work as specified below. This plan will be submitted to Graduate Admissions and Program Evaluations (GAPE) using the Candidacy Form.

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 university standards and be approved by the Associate Vice President for Graduate Studies and Research.

Plan B (with Project)

In lieu of a thesis, a student may complete a thesis quality research project by enrolling in PADM 298, Special Problems. In PADM 298 the student will complete the substantial paper under faculty supervision to complete the project component of Plan B.

	Semester Units
Core Courses	15
Each student must complete a core curriculum of 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.</cstyle:> PADM 210, PADM 212, PADM 213, PADM 214 and PADM 218	
Required Advanced Seminars	9-18
Complete at least three courses from: PADM 202, PADM 215, PADM 217, PADM 219, PADM 223, PADM 228, PADM 295	
Electives	0-9
Depending on thesis or project arrangements, electives may include additional MPA courses, the PADM 281, Internship, or approved 100- or 200-level courses in political science or other departments, up to a maximum of 9 units.	
Thesis or Special Problems	3
Plan A PADM 299	3
Plan B PADM 298	3
Total Units Required	36

No more than six hours of 100-level course work may be applied towards the MPA degree.

Students who do not have substantial management work experience related to the curriculum are required to complete an appropriate internship and register for PADM 281 as an elective.

Evidence of competence in written English is necessary to qualify for the master's degree.

Within the program, PADM 210 meets this requirement.

Psychology Department

College of Social Sciences

Dudley Moorhead Hall 157
408-924-5600
www.sjsu.edu/psych

Professors

Arlene Asuncion
Sheila Bienenfeld
Glenn Callaghan
Robert Cooper
Sharon Glazer
Megumi Hosoda
Laree A. Huntsman
Kevin Jordan
Elena Klaw
Annabel Prins
Ronald Rogers, Chair
Howard Tokunaga
Mark Van Selst

Associate Professors

Mildred Alvarez
Cheryl Chancellor-Freeland
Gregroy Feist
Jennifer Gregg
Lynda Heiden
Sean Laraway
Clifton M. Oyamot, Jr.

Assistant Professors

Cary Feria

Curricula

BA, Psychology
BS, Psychology
Minor, Psychology
MA, Psychology
MS, Psychology, Concentration in Clinical Psychology
MS, Psychology, Concentration in Industrial/Organizational Psychology

Introduction

The BA in Psychology provides students with useful and marketable skills that go beyond basic knowledge of the content of psychological facts and theories. Successful majors develop good research and technical writing skills, develop high-level skills for analyzing, synthesizing and evaluating information, and become good problem solvers with well-developed people skills. A BA - Psychology is an appropriate broad liberal arts major for many students who will directly enter the workforce. A list of fields that frequently hire psychology students is available in the department. The psychology degree is also suitable pre-professional preparation for such careers as business, law, medicine and theology, as well as the graduate training necessary for careers in psychology.

The BS in Psychology provides more rigorous training in experimental psychology than the BA, although it provides the same skill sets and preparation for the same careers. In addition, although the BS offers less flexibility in terms of electives, its more focused scientific and methodological training is particularly appropriate for those planning to pursue a PhD in psychology or advanced training in some other technical field. It is possible to move easily from the BS to the BA or vice versa early in one's educational career, so students should consult with an advisor about their selection once they have decided to major in psychology.

Graduate study in Psychology is also extremely popular. The Psychology Department offers programs for those seeking terminal master's degrees in clinical psychology as well as industrial/organizational psychology. These MS degrees are called terminal master's degrees because they provide training for employment rather than for moving on to the next level of graduate training. The department also offers an MA degree designed to prepare students with the background in experimental psychology that will be required for additional advanced training leading to a doctoral degree in psychology or related fields, as well as for employment in human factors or other research settings. The MS and MA degrees fulfill the degree requirement for teaching psychology at the community college level.

The undergraduate and graduate students in psychology are a diverse group that mirrors the diversity in the SJSU student population, with a somewhat higher proportion of women. They are well represented on the list of Dean's and President's Scholars. Psi Chi, the psychology honors association, is very active in departmental activities, such as the Psychology Convocation at the end of the Spring semester, and in organizing speakers who present information of general psychological interest and relevance to students' professional lives including preparation or graduate school applications. They also organize the Spartan Psychological Association Research Conference (SPARC) meeting each spring. This meeting provides an opportunity for students to present their research findings in a local meeting before venturing to regional or national professional meetings.

Psychology faculty offer students a variety of expertise and experience. Some focus on basic research in areas such as cognition, social psychology, developmental psychology and psychobiology, while others focus on more applied areas such as clinical practice, industrial and organizational psychology and aerospace human factors. Faculty in the department receive several million dollars per year in grant support. Some of these funds support projects that either hire students as research assistants or permit course credit in return for student involvement. Additionally, faculty run a variety of community-oriented and service learning programs such as the hooked-on-books reading program which promotes literacy, and domestic violence prevention programs run in conjunction with a number of community organizations. Our faculty are frequently recognized for their award winning scholarship and teaching. Each year many students are co-authors of papers presented at professional meetings or published in professional journals.

Advising

Separate advising arrangements are provided for the undergraduate and graduate programs. You should begin by visiting the Department Website or visiting the Department office to pick up advising materials. Many students also find that outside of the formal advising process, other psychology faculty whose area of expertise matches their own interests are useful sources of information and provide important mentoring and informal career guidance. The department's Web site, www.sjsu.edu/psych is also a valuable source of information but is not a substitute for face-to-face meeting with a department advisor.

At the undergraduate level, you are advised to declare yourself as a psychology major early in your academic career and meet with a departmental advisor frequently.

At the graduate level, each graduate program has one faculty member designated as the program coordinator who is also the official program advisor. Graduate students who are writing a thesis also choose a thesis advisor from among the faculty.

Transfer Students

The Psychology Department welcomes transfers and seeks to facilitate the transition to SJSU. We work with community college advisors so they can provide useful information about our major. Community college courses evaluated as equivalent to SJSU courses in the lower division are automatically transferable. The psychology major is designed so as many as 9 lower division units in psychology can be transferred plus the required 3 units in biology and 3 units of statistics. Lower and upper division courses from other four-year institutions that have not been evaluated may also be transferable. We will ask you to provide a complete description of the course (the syllabus usually provides the most complete information) so that a psychology advisor can evaluate comparability. If you have a substantial amount of course work taken elsewhere, see a Psychology Advisor.

Facilities and Support Staff

The department maintains a variety of facilities and support staff to enhance instruction and research. For biological and cognitive research and instruction, the department has a number of laboratories and specialized laboratory equipment on campus. In addition, the department has an agreement with NASA-Ames Research Center in Mountain View under which selected students interested in experimentation and human factors serve as interns. Students interested in human factors or industrial-organizational psychology also have access to local businesses and corporations through the department, and externally-funded research assistantships in a variety of areas are available on campus.

For graduate work in clinical psychology, the department has a psychology clinic consisting of therapy rooms and adjoining observation rooms equipped with audio and video equipment. These rooms are also available to individuals working on research in other areas, such as developmental, personality and social psychology. In addition, undergraduate students interested in counseling-related activities have access to a number of off-campus organizations, and graduate student interns help staff many local mental health and related organizations.

Three computer laboratories are available for use by students. These labs have extensive software for statistical analyses, word processing and other computer-related tasks. Statistical consultants are available to help with the design and interpretation of statistical analyses, and for help understanding computer exercises.

The department maintains an excellent Web site where detailed information and answers to frequently asked questions may be found. Students should consult this Web site frequently. The URL is www.sjsu.edu/psych.

Psychology Honors Program

Students requesting departmental honors in psychology will be selected on the basis of the following criteria: (1) a minimum GPA of 3.5 in all psychology course work; (2) completion of PSYC 117, PSYC 120, PSYC 121(A, B, C or E), STAT 95, and STAT 115 with a GPA of at least 3.5; and (3) 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. Contact the department office for details.

Behavioral Science Program

The Behavioral Science Program is designed for students who wish to develop an interdisciplinary perspective on human behavior. The program is offered cooperatively by the Departments of Anthropology, Psychology and Sociology, although all academic advising is performed by the Department of Anthropology. For further information please contact the Department of Anthropology, 408-924-5710.

BA - Psychology

The undergraduate degree 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., STAT 95 is a prerequisite for PSYC 100W, PSYC 100W is a prerequisite for PSYC 120, PSYC 120 is a pre- or co-prerequisite for 190) as well as using the advisor's expertise for GE, SJSU Studies, and American Institutions course selection and to ensure a strong foundation for future course work. To aid in this process the department has prepared a set of guidance sheets. These materials are especially important for those in the honors program or those planning to go on to graduate school in psychology. Other materials have also been prepared which 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 these materials are available from www.sjsu.edu/psych or the department office.

	Semester Units
General Education Requirements	42
Of the 51 units required by the university, 9 may be satisfied by specified major and support requirements. Consult major advisor for details.	
American Institutions	(6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.	
Physical Education	2
Preparation for the Major	3-4
BIOL 021 or BIOL 065	
Required Courses in Psychology	45
Lower Division Core	9
PSYC 001, PSYC 030 and STAT 095	
Upper Division	28
PSYC 100W, PSYC 102, PSYC 110 and PSYC 120 (13); PSYC 135, PSYC 155 or PSYC 158 (3); PSYC 139 or PSYC 154 (3); PSYC 117 or STAT 115 (3); PSYC 129, PSYC 160 or PSYC 170 (3); PSYC 190 or PSYC 195 (3)	
Psychology Electives	8
Five units of upper division psychology courses (5) and three units of upper or lower division psychology courses (3).	
Electives	27-28
Total Units Required	120

Note: UNVS 015C may be used in lieu of the statistics course required by this major through the Summer 2014.

BS - Psychology

The BS degree is a regimented degree plan for students who wish to develop a focused set of skills in pre-selected areas so they can apply these skills in a technical setting or seek advanced graduate training. The BS degree program has more course requirements than the BA (i.e., fewer electives). The degree plan emphasizes research focused scientific and methodological training, as well as breadth in pre-selected areas of psychology and other fields (biology, chemistry, philosophy). Students should seek early and frequent advice from departmental advisors.

Semester Units

General Education Requirements 42
Of the 51 units required by the university, 9 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 12-13
BIOL 021 or BIOL 065 (3-4); Complete nine units from: BIOL 101, BIOL 109, CHEM 001A or CHEM 030A, CHEM 001B or CHEM 030B, PHIL 110, PHIL 160 (9)

Required Courses in Psychology 54-56

Lower Division Core 9
PSYC 001, PSYC 030 and STAT 095

Upper Division 45-47
PSYC 100W, PSYC 102, PSYC 110, PSYC 117, PSYC 120, PSYC 139, PSYC 154 and STAT 115 (25); PSYC 129, PSYC 160 or PSYC 170 (3); Complete two courses from: PSYC 135, PSYC 155, PSYC 158 (6); Complete two courses from: PSYC 121A, PSYC 121B, PSYC 121C, PSYC 121E (4); PSYC 190 or PSYC 195 (3); one upper division psychology elective (2-3); one upper or lower division psychology elective (2-3)

Electives 7-10

Total Units Required 120

Note: UNVS 015C may be used in lieu of the statistics course required by this major through the Summer 2014.

BA - Behavioral Science

See index.

Minor - Psychology

Courses constituting a minor in psychology vary with the student's major curriculum. The minimum number of units is 18, at least 12 of which must be upper division. See a Psychology Department advisor for approval of courses.

Special minors have been developed for students majoring in occupational therapy and Child and Adolescent Development. Details of the special minors may be obtained from the main Psychology Office, Psychology Department Advisors, or the departmental Web site.

MA - Psychology

The Master of Arts Program in 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 and 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:

1. Meet all of the University's graduate admissions requirements

2. Have the equivalent of a U.S. baccalaureate degree

3. Have completed a minimum of 30 semester units in undergraduate psychology

4. Have a minimum GPA of 3.0 in the last 60 semester units (90 quarter units) of all college and/or university course work

5. Have a minimum GPA of 3.0 in all college and/or university psychology courses taken

6. 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 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

1. 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.

2. 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.

3. The candidate must complete an acceptable thesis. This thesis will be a quantitative investigation of some degree of originality and of publication caliber.

4. 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.

5. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Evaluations website at http://www.sjsu.edu/gape {http://www.sjsu.edu/gradstudies}.

Semester Units

Core Domain 12
PSYC 280, STAT 245 and PSYC 220 (9); PSYC 240 or STAT 235 (3)

Breadth Domain 12
PSYC 235 or PSYC 256 (3); PSYC 204 and PSYC 230 (6); PSYC 200 or PSYC 254 (3)

Applied Domain 6
PSYC 299 (3) and elective (3)

Total Units Required 30

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 in order to provide further guidance and expertise. Collection of the thesis data begins once the proposal has been approved by the committee and the proper animal care/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 www.sjsu.edu/psych.

MS - Psychology

The Master of Science (MS) degree in Psychology is intended to develop master's level professional competencies in either of two concentration areas in applied psychology. The two areas of study are clinical and industrial/organizational psychology. Typically, these master's degrees are considered terminal degrees in which the objective is acquisition of professional employable skills appropriate to the program area. Once students are accepted into one of the programs, their Program Coordinator helps them plan a program of study appropriate to their career objective. In the MS Clinical Program, the program of study is identical for all students, such that they meet California MFT licensing eligibility requirements. In the MS Industrial/Organizational program, programs of study consist of both required and elective courses. The approved program of study is then submitted to the University's Office of Graduate Studies and Research for its final approval.

Concentration in Clinical Psychology

The Clinical Psychology program 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 50 semester units meets most of the course work requirements for the California State Marriage and Family Therapist (MFT) license. An additional 2500-2700 hours of acceptable supervised experience is required for admission to the state MFT licensing examination.

Admission Requirements

To be eligible for admission into the Clinical Psychology program, you must:

- 1. Meet all of the University graduate admissions requirements 2. 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
- 3. 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).
- 4. 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).
- 5. Provide evidence of a minimum of 100 hours AND one year of paid or volunteer applied clinical experience working with persons in a counseling/helping capacity (e.g., volunteer in home for emotionally disturbed children, juvenile hall, suicide and crisis telephone hotline).
- 6. Provide three letters of recommendation. One reference MUST be from a former clinical supervisor. 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

- 1. General or Introduction to Psychology (SJSU code PSYC 1)
- 2. Elementary Statistics (SJSU code STAT 95)
- 3. Introduction to Research Methods (SJSU code PSYC 18 or PSYC 120)
- 4. 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.

- 5. Upper division course in Abnormal Psychology (SJSU code PSYC 110)
- 6. Upper division course in Theory and Methods of Counseling (SJSU code 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.

- 1. The student must complete a total of 50 units in clinical psychology as specified in the table below.
- 2. Candidates in must demonstrate satisfactory performance on one or more final comprehensive examinations. These examinations shall be written, oral or both, as determined by the program committee.
- 3. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at http://www.sjsu.edu/gape.

	Semester Units
Core Courses PSYC 203A, PSYC 208, PSYC 209, PSYC 210, PSYC 211, PSYC 222, PSYC 223A, PSYC 223B, PSYC 224A, PSYC 224B, PSYC 228, PSYC 232, PSYC 258, PSYC 291 and PSYC 295	45
Field Work PSYC 243	5
Total Units Required	50

Concentration in Industrial/Organizational Psychology

The Industrial/Organizational (I/O) Psychology program 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:

- 1. Meet all of the University graduate admissions requirements
- 2. Have the equivalent of a U.S. baccalaureate degree
- 3. Have completed a minimum of 30 semester units in undergraduate psychology
- 4. Have a minimum GPA of 3.0 in the last 60 semester units (90 quarter units) of all college and/or university course work
- 5. Have a minimum GPA of 3.0 in all college and/or university psychology courses taken
- 6. 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.

- 1. The student must complete a total of not less than 30 semester units for the industrial/organizational concentration as specified in the degree below.
- 2. Candidates in the MS Industrial/Organizational program must complete a thesis as part of their 30 semester unit degree requirement. The nature of the thesis is to be determined in consultation with a committee of at least three faculty members. The thesis ordinarily consists of a quantitative investigation or program design, trial and evaluation of some degree of originality. The topic should be relevant to the field of study in which the candidate plans to work. The thesis will generally constitute the final comprehensive examination.
- 3. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at http://www.sjsu.edu/gape.

	Semester Units
Core Courses PSYC 240, PSYC 249, PSYC 270, PSYC 271 and STAT 235	15
Electives 9 units of department advisor-approved electives	9
Capstone PSYC 299	6
Total Units Required	30

Science Education Program

College of Science

Professors

Paula Messina
Ellen P. Metzger, Director

Associate Professors

Resa Kelly
Elizabeth M. McGee, Graduate Advisor

Curricula

BA, Biological Sciences, Preparation for Teaching
BA, Chemistry, Preparation for Teaching
BA, Earth Science
BA, Life Science, Preparation for Teaching
BA, Physics, Preparation for Teaching
Minor, Science Education
Minor, Science Content for Teaching
MA, Natural Science

Introduction

The Science Education Program coordinates the College of Science programs for the preparation and enhancement of K-12 science teachers. The faculty members are members of one of the science departments or elementary teacher education.

Science preparation for teaching requires course work in at least four of the five science departments in the college. There are majors in biological sciences, chemistry, earth science and physics designed to prepare high school and middle school teachers of science. There is also a major in natural science which is designed to prepare elementary school teachers to be science specialists. People who are preparing to teach high school or middle school by majoring in other subjects may also prepare to teach a specific high school science subject, or all science subjects in grades K-9.

The Secondary preparation for the California teaching credential requires breadth in all sciences to prepare individuals to teach all sciences in grades K-9. In addition, the student must complete a concentration in at least one science: biological science, chemistry, geoscience or physics. The following majors provide students with appropriate content knowledge for teaching science and help to prepare them for the California Subject Examinations for Teachers (CSETs), which are required to demonstrate subject matter competency when applying to the credential program. See the index of this catalog for more information.

- Biological Science; BA - Biological Sciences
- Chemistry; BA - Chemistry
- Geoscience; BA - Earth Science
- Physics; BA - Physics

Preparation for elementary grade teaching requires a diversified major. The BA - Life Science (see index) is a diversified major that qualifies the candidate to teach science in an elementary school.

Preparation for Science Teaching in the Secondary School (Single Subjects) Credential Program is offered by the Science Education Program in coordination with the Secondary Education Program in the College of Education. This graduate program requires separate admission and approval in both the College of Science and Teacher Education in the College of Education. Science Education courses focus on methods and practice in teaching high school and middle school science. Information about appropriate science majors, the credential program and how to schedule admissions interviews is available in the Science Education Program Office.

The Master of Arts degree in Natural Science is especially designed for secondary science teachers and others involved in science education. The curriculum is designed to broaden the candidate's background in basic sciences, as well as increase academic proficiency and professional competence in areas within science education. The Science Education Program also offers specialized teacher in-service programs.

BA - Biological Science, Preparation for Teaching

See Biological Sciences Department listing (see index).

BA - Chemistry, Preparation for Teaching

See Chemistry Department listing (see index).

BA - Earth Science

See Geology Department listing (see index).

BA - Life Science, Preparation for Teaching

See Biological Sciences Department listing (see index).

BA - Physics, Preparation for Teaching

See Physics Department listing (see index).

Minor - Science Education

	Semester Units
ASTR 101, BIOL 020, BIOL 021, BIOL 110, CHEM 030A, CHEM 030B, GEOL 103, GEOL 105, PHYS 002A and PHYS 002B (32)	
Total Units Required	32

Minor - Science Content for Teaching

The science education minor 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.

	Semester Units
BIOL 020 and BIOL 021 (6) or BIOL 001 and BIOL 002 (8); BIOL 110 (3); CHEM 030A (3) or CHEM 001A (5); CHEM 030B (3), PHYS 002A (4) or PHYS 050 (4); PHYS 002B or PHYS 051 (4); ASTR 101 (3); GEOL 103 and GEOL 105 (6)	(32-36)
Total Units Required	32-36

MA - Science Education

The MA in Science Education is a flexible program designed for K-12 teachers involved or interested in science education, and for science educators and specialists working in informal or outdoor education. The curriculum is designed to augment and broaden the candidate's background in science content as well as increase academic proficiency and professional competence in science education pedagogy.

Beginning Fall 2011, qualified students who have earned a multiple- or single-subject credential at San Jose 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 MA Science Education degree.

Requirements for Admission to Classified Standing

Minimum requirements for admission 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 Science Subtests I and II (test codes 118 and 119) of the California Subject Examinations for Teachers (CSET);

Evidence of appropriate goal(s) and commitment to graduate-level study as demonstrated by a letter of intent written by the applicant and letters of recommendation from two or more persons qualified to judge the applicant's potential as a graduate student;

Approval of the graduate advisor and/or graduate committee.

Requirements for Admission to Conditionally Classified Standing

A student who meets all requirements for admission to classified standing except for some undergraduate prerequisites may be admitted to conditionally classified standing. Classified standing may be achieved by demonstration of subject matter competency, as evidenced by an undergraduate degree in a science discipline or through successful completion of the Science Subtests I and II (test codes 118 and 119) of the California Subject Examinations for Teachers (CSET). Lower division and/or general education coursework used to achieve subject matter competency may not be used for credit toward the Master's degree.

Requirements for Admission to Candidacy for the MA - Science Education

The student must satisfy general university requirements for candidacy as outlined in detail in this catalog. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape.

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. The written thesis must be submitted to the Associate Vice President for Graduate Studies and Research.

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 SCI 298 units. At the end of the program, the candidate must successfully deliver an oral seminar on the project, and submit a written report of the project to the Master's advisor and graduate committee.

	Semester Units
Required Courses SCI 220 and SCED 173	6
Electives SCI 201, SCI 205, SCI 208, SCI 210, SCI 255, or other courses within the College of Science selected with advisor approval. A maximum of 9 units taken through the College of Education may be applied to the degree with advisor approval (approved 100- or 200-level courses include EDSC 162, EDSC 138A, EDSC 172A, EDSC 173, EDSC 182, EDTE 190, EDSE 192).	18
Thesis or Project SCI 299 (Plan A) or SCI 298 (Plan B) (up to 3 units per semester)	6
Total Units Required	30

Social Work Program

College of Applied Sciences and Arts

Washington Square Hall 215
408-924-5800

Professors

Alice Hines, Director
Peter Allen Lee
Migdalia Reyes

Associate Professors

Emily J. Bruce
Edward Cohen
Amy D'Andrade
Sadhna Diwan
Laurie Drabble
E. Michael Gorman
Meekyung Han
Kathy Lemon Osterling

Assistant Professors

Sang Lee
Soma Sen

Curricula

BA, Social Work
Minor, Social Work
MSW, Master of Social Work
Certificate, Spanish Language Counseling
Credential, Pupil Personnel Services (PPSC)
Certificate, Gerontology

Introduction

Social work is a dynamic, changing, and challenging profession with a vast range of career opportunities for personal job satisfaction. The social work profession has its own body of knowledge, code of ethics, practice standards, credentials, state licensing and a nationwide system of undergraduate and graduate accredited educational programs. These equip the professional social worker to combine the desire to help others with the knowledge, skill and ethics needed to provide that help.

A professional social worker assists people in coping with complex interpersonal and social problems and helps to obtain the resources people need to live with dignity. At the same time, the social worker is also committed to making society more responsive to people's needs. The contemporary social worker assists people from all walks of life, with all kinds of problems, in all kinds of settings - in public agencies, in nonprofit agencies, in hospitals and clinics, in schools, in the workplace and in the community.

In confronting problems, the social worker is continually assessing, understanding, developing relationships, counseling, coordinating, mobilizing and initiating efforts to help people build their own lives while also helping the community create and deliver the services and support that people need.

All basic social work education includes courses on human behavior, family dynamics, social policy and services, social work methods, research, knowledge of community resources and how to use them, and agency field placements to develop practice skills. Special course work and selected field placements enable students to pursue individual interests within the field of social welfare.

It is the purpose of the BASW and MSW programs in Social Work to prepare social workers for culturally competent practice with Latinos, African Americans, Asian Americans and Native Americans, and those communities, groups, families and individuals in California who are disenfranchised, oppressed and/or marginalized. Within this special focus, the transcultural social work perspective developed by the Social Work programs promotes commitment of students, faculty and alumni to advocate for social justice, to build upon the strengths of diverse cultures, and to enhance the well-being of individuals and their communities.

BA - Social Work

The BASW program, which 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, and communities, 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.

	Semester Units
General Education Requirements Of the 51 units required by the university, 6 may be satisfied by specified major and support requirements. Consult major advisor for details.	45
American Institutions Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.	(6)
Physical Education	2
Support for the Major BIOL 021 and STAT 095	6
Requirements for the Major SCWK 110, SCWK 111, SCWK 112, SCWK 120, SCWK 121, SCWK 130, SCWK 131, SCWK 140, SCWK 141, SCWK 142, SCWK 170 and SCWK 175	38
Electives	29
Total Units Required	120

Note: UNVS 015C may be used in lieu of the statistics course required by this major through the Summer 2014.

Students must complete SCWK 110, 120, and 130 with a grade of "C" or better and successfully pass the Introductory Field Practicum Course (SCWK 140) to become eligible for the agency field practicum and SCWK 141, Practicum I.

Minor - Social Work

The minor in 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.

	Semester Units
Required Courses SCWK 010, SCWK 110, SCWK 120 and SCWK 130	12
Electives Complete two courses from: SCWK 121, SCWK 131, SCWK 140, SCWK 170, SCWK 190, SCWK 192, SCWK 195, SCWK 197	6
Total Units Required	18

Certificates and Credentials for Master of Social Work Program

A certificate in Spanish Language Counseling is available to students who, through course work or examination, show evidence of competency to conduct counseling/therapy in Spanish.

A certificate in Gerontology is available to students who meet the requirements for study in gerontology developed jointly by the School of Social Work and the University Gerontology Education and Training Center.

The Pupil Personnel Services Credential (PPSC), required for work in California's public school system, may be obtained by MSW graduates who meet the requirements of the PPSC program in the graduate social work program.

MSW - Master of Social Work

The MSW Program offers graduate professional education in advanced social work practice from a transcultural multi-systems perspective, with a particular focus in a field of practice. The curriculum has been developed to emphasize 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 program prepares graduates for advanced practice and leadership in the following fields of practice: aging, children, youth, and families; health/mental health; and school social work. The graduate program has been fully accredited by the national Commission on Accreditation of the Council on Social Work Education since 1973.

Requirements for Admission to Classified Standing

In addition to the general requirements established by the university as set forth in the Admissions section of this catalog, applicants for admission to classified standing for the Master of Social Work degree must have demonstrated a commitment to social work goals either by having completed undergraduate social work education, or hold a BA in a related field and have significant experience and/or personal involvement with minority groups and communities on social issues.

To be admitted to the program a student must:

1. Complete a separate application for admission to the University, submit required transcripts and pay the required application fees (University and MSW program fees).

2. Complete a separate application to the MSW program which includes:

a. An autobiographical statement describing the development of the candidate's interest in the field and professional goals.

b. Three letters of recommendation from professionals in the field or former professors who can testify to the candidate's ability to meet the challenges of the profession.

3. Foreign students must score at least 550 on the TOEFL and must demonstrate English proficiency in a written essay.

4. The application to the MSW program with the supporting material must be sent directly to the Director of Admissions of the MSW program for review and recommendation by the MSW program admissions committee.

Requirements for Admission to Conditionally Classified Standing

Students who do not meet the minimum GPA requirement of 2.5 may apply for conditionally classified status. The MSW Admission Committee may consider applicants who possess strong or considerable work experience and who can remedy minor academic deficiencies by additional preparation.

Requirements for Admission to Candidacy

To be admitted to candidacy for the Master of Social Work degree, students must meet the general requirements of the university as set forth in the Academic Regulations section of this catalog. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at http://www.sjsu.edu/gape.

The applicant must demonstrate aptitude for advanced study in social work, as measured by successful completion of the first year of study, instructor appraisals, evaluation of previous academic work, recommendations by qualified professionals, or other assessments.

The applicant must meet with the MSW graduate advisor to complete an application for candidacy. The application includes an official program of study listing all courses needed to complete the requirements for the degree. The program of study must be approved by the MSW graduate advisor and then by the Associate Vice President for Graduate Studies and Research, who notifies the student of acceptance into candidacy.

Completing Requirements for the Master of Social Work Degree

The MSW program offers both a full-time and a 3-year plan of study. Full-time study requires a two-year commitment to the program, while the 3-year plan may be completed in a three year structured plan of study. With either plan, the course requirements for completing the degree are identical.

The student must complete a total of not less than 60 semester units of study in social work with a minimum grade point average of 3.0 overall. This includes two years (1200 hours) of field internship in a social agency or community setting selected and approved by the MSW field education committee.

Candidates for the degree have the option of either completing a thesis (Plan A) or a project (Plan B) and to defend their study before a thesis/project committee as part of their 60 semester unit degree requirement. Students choosing to complete a thesis must meet program prerequisites and receive approval of the research committee. The topic must relate to the candidate's area of practice and to the mission of the MSW program. The thesis must meet all university requirements in content and format. The special project must be a professionally written study based on the student's field placement.

As deemed appropriate by the faculty of the social work program, satisfactory performance in final examinations in the core areas of social work practice may be required. These examinations may be written, oral or both.

Students are required to demonstrate their competency in written English to be advanced to candidacy for the master's degree by meeting the University English Competency and MSW requirements.

The Curriculum (60 Semester Units Total)

The First Year Curriculum (32 Semester Units)

In the first year students develop a solid foundation in generalist social work practice with the goal of effective performance under the guidance and supervision of a professional social worker. The primary skills and competencies that are taught consist of the ability to assess, plan, implement and evaluate practice with systems of varying size from a transcultural perspective.

The Second Year Curriculum (28 Semester Units)

The second year of the MSW program sequentially builds upon foundation content attained in the first year to prepare students for advanced practice from a transcultural and multi-systems perspective. As students progress through the program they are expected to increase their levels of independence, initiative and leadership, utilizing greater discretion and judgment for self-direction and professionally autonomous practice, with systems of varying size.

In addition, content is included on the fields of practice which are particularly connected to the mission of the program and the practice needs of the region: aging; children, youth, and families; school social work; and health/mental health, particularly those who are Latino, African American, Asian American and Native American, and are communities, groups, families and individuals who are disenfranchised, oppressed and/or marginalized.

	Semester Units
First Year Curriculum (Foundation)	32
Fall Semester	16
SCWK 202, SCWK 212, SCWK 220, SCWK 230 and SCWK 240	
Spring Semester	16
SCWK 204, SCWK 214, SCWK 221, SCWK 231 and SCWK 242	
Second Year Curriculum (Transcultural Multi-Systems)	28
Fall Semester	14
Those applying for the Title IV-E stipend program must complete the Children, Youth and Families field of practice. Those applying for PPSC should complete the School Social Work field of practice.</cstyle:>	
Aging: SCWK 251, SCWK 232 and SCWK 298 (11); one SCWK elective (3)	
Children, Youth and Families: SCWK 222 and SCWK 232 (8); SCWK 261 or SCWK 262 (3); one SCWK elective (3)	
School Social Work: SCWK 232, SCWK 263, SCWK 271 and SCWK 298	14
Health/Mental Health: SCWK 232, SCWK 281 and SCWK 298 (11); one SCWK elective (3)	
Spring Semester	14
SCWK 232, SCWK 233 and SCWK 298 (11); SCWK 250, SCWK 260, SCWK 270 or SCWK 280 (3)	
Total Units Required	60

Once the field of practice is selected, students must continue with the required courses in that respective curriculum plan.

The 3-year Program

The MSW Program offers a 3-year program designed for working professionals and includes course work in the evenings and on weekends. The 3-year program requires three years of academic work combined with two years of field practicum. Depending on the courses offered during the summer term, this time period for 3-year students may be accelerated.

3-year students complete the first year curriculum requirements in two years. In the second year, 3-year students enter the field practicum and concurrently enrolled in social work practice courses. Field instruction in the 3-year MSW Program meets the same administrative and educational requirements as the full-time program.

Year Round Operations

To assist "matriculated students" in progressing more rapidly toward earning their MSW degree, and to increase accessibility year around to the course curriculum for both full-time and 3-year students, the MSW Program offers a limited number of "regular" graduate level courses during the summer term. The range of classes (number and type) offered by MSW Program will depend on student interest and faculty resources.

Sociology Department

College of Social Sciences

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Wendy Ng, Chair

Associate Professors
Peter Chua
Carlos Garcia
Susan Bell Murray

Assistant Professors
Natalie Boero
Amy Leisenring
Preston O. Rudy

Curricula
BA, Sociology
BA, Sociology, Concentration in Community Change
BA, Sociology, Concentration in Social Interaction
Minor, Sociology
MA, Sociology

Introduction
Sociology examines people's behavior in groups. It analyzes how social institutions and social structures like the workplace, economy, politics, education, marriage and family, mass media and the criminal justice system affect individuals, and how individuals actively change their surrounding social worlds. Sociologists also explore how socioeconomic status (social class), gender, race/ethnicity/immigrant status, age, sexual orientation, and marital status affect people's chances in life, their behavior and their attitudes. Through the insights provided by the study of sociology, students gain an understanding of -- and potential solutions to -- current social issues and social problems.

Sociology BA recipients may move directly into the department's MA program in general sociology. Many of our MA graduates continue on to PhD programs at some of the finest universities in the nation.

Careers
As the broadest and most all-encompassing of the social sciences, the flexibility offered by a BA in sociology, and the computer and analytical skills learned in the major, lead to many exciting careers. These include work in probation, police and corrections, marketing research, domestic violence counseling, public agencies of all kinds, the law, teaching, human resource management, social work, and much more.

Department concentrations in Social Interaction, and Community Change are available for students who seek course work that fits their specific interests or career goals. Guidance sheets for each of the concentrations and for the General course of study in sociology are in the department office.

Faculty and Staff
Sociology faculty are well-known as exceptional teachers who offer a wide array of hands-on experience, and scholarly expertise to students. Class sizes encourage student-faculty and student-student interactions. Faculty -- serving as advisors and mentors -- also help students design the program of courses that best fits individual needs and goals. Students choose their own advisors often based on shared areas of interest. The excellent office staff is especially knowledgeable, friendly and helpful.

Sociology Honors Program
The Sociology Department, through its honors program, recognizes the achievements of sociology majors with an overall GPA of 3.2 and a 3.5 in all sociology courses. The program also requires a senior honors thesis, SOCI 199H (may count as a sociology elective), which consists of researching and writing an original project. Successful completion of the program permits the students to graduate with Honors in Sociology. Interested students should consult their advisor.

Behavioral Science Program
The Behavioral Science Program is designed for students who wish to develop an interdisciplinary perspective on human behavior. This perspective allows them to understand the psychological, social and cultural dimensions to being human in a complex society. Students develop broad skills in collecting data, logically and consistently analyzing data, communicating clearly, and problem solving. The program is offered cooperatively by the Departments of Anthropology, Psychology and Sociology, although the Department of Anthropology performs all academic advising. The requirements for the BA - Behavioral Science are located under the Behavioral Science Program listing in this catalog. Students interested in further information about the major should contact the Department of Anthropology, 408-924-5710.

BA - Sociology

The BA in sociology offers students the widest flexibility possible in terms of career choices. Sociological analyses supply an understanding of all aspects of the social world, human behavior in groups, the sources and consequences of social change, and potential solutions to social problems. Computer and research-design courses round out the valuable skills possessed by sociology majors.

Semester Units

General Education Requirements 39-42
Of the 51 units required by the university, 9-12 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Requirements in the Major 42

Core Requirements 27
SOCI 001, SOCI 080, SOCI 100W, SOCI 101, SOCI 104, SOCI 105 and SOCI 116 (21); SOCI 015 or SOCI 102 (3); SOCI 104B, SOCI 105B or SOCI 181B (3)

Additional Requirements 15
Complete one course from: SOCI 140, SOCI 153, SOCI 160, SOCI 161, SOCI 162, SOCI 163, SOCI 164, SOCI 165, SOCI 169 (3); Complete one course from: SOCI 107, SOCI 151, SOCI 170, SOCI 171, SOCI 172, SOCI 173, SOCI 174, SOCI 175, SOCI 176, SOCI 178 (3)
Select any three upper division Sociology courses (may include SOCI 199H) 9

Electives 34-37
A minor is strongly recommended.

Total Units Required 120

SOCI 120, SOCI 180, SOCI 196 and SOCI 199H may be applied to the major when they have direct relevance; such relevance is determined by advisor.

Double major or double concentration requirements: contact the Sociology Department for an appointment with the department chair.

BA - Sociology, Concentration in Community Change

Semester Units

General Education Requirements 39-42
Of the 51 units required by the university, 9-12 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Requirements in the Major 42

Core Requirements 27
SOCI 001, SOCI 080, SOCI 100W, SOCI 101, SOCI 104, SOCI 105 and SOCI 116 (21); SOCI 015 or SOCI 102 (3); SOCI 104B, SOCI 105B or SOCI 181B (3)

Community Change Concentration 15
SOCI 163 (3); Complete two courses from: SOCI 057, SOCI 160, SOCI 164, SOCI 165 (6); Complete two courses from: SOCI 118, SOCI 120, SOCI 146, SOCI 161, SOCI 162, SOCI 166, SOCI 169, SOCI 171, SOCI 199H (6)

Electives 34-37
A minor is strongly recommended.

Total Units Required 120

SOCI 180, SOCI 196, and SOCI 199H may be applied to the major when they have direct relevance to the concentration; such relevance is determined by approval of an advisor.

Family, Sociology

BA - Sociology, Concentration in Social Interaction

Semester Units

General Education Requirements 39-42
Of the 51 units required by the university, 9-12 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Requirements in the Major 42

Core Requirements 27
SOCI 001, SOCI 080, SOCI 100W, SOCI 101, SOCI 104, SOCI 105 and SOCI 116 (21); SOCI 015 or SOCI 102 (3); SOCI 104B, SOCI 105B or SOCI 181B (3)

Social Interaction Concentration 15
SOCI 171 or SOCI 173 (3); Complete three courses from: SOCI 140, SOCI 151, SOCI 162, SOCI 166, SOCI 170, SOCI 172, SOCI 174, SOCI 175, SOCI 178 (9); Complete one course from: SOCI 107, SOCI 152, SOCI 154, SOCI 160, SOCI 161, SOCI 165, SOCI 169, SOCI 177, SOCI 199H (3)

Electives 34-37
A minor is strongly recommended.

Total Units Required 120

SOCI 120, SOCI 180, SOCI 196, and SOCI 199H may be applied to the major when they have direct relevance to the concentration; such relevance is determined by approval of an advisor.

BA - Behavioral Science

See index.

Minor - Sociology

Semester Units

SOCI 001 (3) and other courses approved by the minor advisor, at least three of which must be upper division (15) (18)

Total Units Required 18

The minor in sociology 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.

Double Minor

Fifteen units of sociology are required for those who minor in two different departments.

MA - Sociology

Requirements for Admission to Classified Standing

Minimum requirements for admission to the Graduate Division are outlined elsewhere in this catalog. Applicants for admission to classified standing in sociology are ordinarily expected to have earned the baccalaureate at an accredited college or university with a grade point average of 3.0 (on a 4-point scale) in upper division work, and a 3.2 or higher in undergraduate major work. Applicants need to have completed prerequisites in sociological theory (SOCI 101 and SOCI 201A or equivalent), research methods (SOCI 104 and SOCI 200A or equivalent), SPSS computer analysis, and statistics, or to have passed equivalent challenge examinations.

An applicant not meeting these requirements may be admitted to conditionally classified standing if there is other evidence of academic ability (see below).

Requirements for Admission to Conditionally Classified Standing

Applicants meeting the university's requirements for the Graduate Division but lacking one or more of the department's requirements for classified standing, may be admitted to conditionally classified standing, if it is determined that the applicant's academic record or work-related experience indicates promise of a successful graduate career in sociology. Applicants who do not have the grade point average required may be admitted conditionally if there is other evidence of academic ability, such as the Graduate Record Examination (GRE).

Applicants who have not completed the undergraduate prerequisite requirements, but who have met the required grade point averages, may be admitted as conditionally classified students. They may take graduate courses concurrently with the required undergraduate prerequisites. Any undergraduate prerequisites must be taken within the first year of enrollment as a conditionally classified student. All required undergraduate prerequisite course work must be passed with a grade of "B" or better and a minimum 3.0 grade point average must be maintained in order to continue with the graduate program. Students may repeat an undergraduate prerequisite course in the first year, if they do not meet the minimum grade requirement. If within the year, the minimum grade for any undergraduate prerequisite course is not met, students will not be allowed to continue the program.

The graduate prerequisite courses 200A and 201A must be passed with a grade of "B" or better. If after the second attempt, a grade of "B" or better is not achieved for these courses, students will not be allowed to continue the program.

The department reserves the right to dismiss any student from the program if their grade point average falls below a 3.0 by notifying the Associate Vice President for Graduate Admissions. This process is known as administrative academic disqualification (see Section 41200.1, Title 5, California Code of Regulations)

Conditionally classified students may complete up to 12 units of graduate work before becoming classified. Once students have completed all prerequisites and have maintained a 3.0 or higher grade point average in all courses taken while conditionally classified, they may apply for classified standing.

International (Foreign) Students

In addition to the requirements for admission outlined above, applicants for the sociology MA program who are either foreign students or resident aliens must also satisfy the university's TOEFL (Test of English as a Foreign Language) examination with a core of 550 or greater). Documentation of the applicant's TOEFL score should accompany other admission material.

Completing Requirements for the MA - Sociology

Upon achieving classified standing, the student and graduate advisor determine a course of study. The student's program of study must be submitted to the Associate Vice President for Graduate Admissions for approval upon which the student is admitted to candidacy for the degree. The department offers three plans of study culminating in the MA degree.

Basic Program

Requirements for the MA in Sociology include 30 units of graduate level course work. Upon completion of SOCI 200A and SOCI 201A with a grade of "B" or better, students are required to complete SOCI 200B and SOCI 201B. Upon approval of the graduate advisor, up to six units of upper division course work in Sociology or graduate level non-sociology course, or a combination of the two may count toward the total 30-unit requirement. Plans A and C students must enroll for thesis (SOCI 299) credit hours. All MA students must complete two written comprehensive exams, one in theory, and one in research methods and data analysis. Each of these exams may be attempted twice. If an exam is not passed by the second attempt, the student will be administratively dismissed from the program.

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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at http://www.sjsu.edu/gape.

The Plans

Plan A (Thesis) and Plan C (Creative Project): Students selecting the thesis option must demonstrate research and writing competency and show the ability to conduct independent research. Upon successful completion of the two written comprehensive exams, the student, with the approval of the graduate advisor, selects a thesis or creative project committee consisting of at least three members, two of whom must be from the faculty in the Sociology Department. The chair of the committee must also be a tenured or tenure-track faculty member in the department. The student may enroll in up to 6 units of Thesis/Research hours (SOCI 299) with the professor designated as chair of the committee.

Plan B (Special Study): After the successful completion of two comprehensive examinations, the student writes two additional comprehensive examinations in two areas of study based upon graduate level sociology courses taught by two different SJSU instructors. Plan B students are required to complete SOCI 298, which is a special study project.

	Semester Units
Core Courses SOCI 200A, SOCI 201A, SOCI 200B and SOCI 201B	12
Electives 200-level Sociology electives, and up to 6 units of approved 100-level courses in Sociology or 200-level courses in another department	12-15
Thesis or Project	3-6
In all plans, students may have only 12 units of C/NC courses.</cstyle:>	
Plan A (Thesis)	3-6
Students must defend a thesis proposal and thesis results before a committee of not fewer than three members, two of whom must be department faculty members.</cstyle:> SOCI 299	
Plan B (Special Study, No Thesis) SOCI 298	3
Plan C (Creative Project) SOCI 299	3-6
Total Units Required	30

Software Engineering

Software Engineering

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Melody Moh
Jon Pearce
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Chris Huan-Chi Tseng

Associate Professors

Teng-Sheng Moh
Mark Stamp
Soon-Tee Teoh
Leonard P. Wesley
Weider Yu

Assistant Professors

Magdalini Eirinaki

Curricula

BS, Software Engineering

MS, Software Engineering (see Computer Engineering Department)

Introduction

The Computer Engineering and Computer Science Departments are jointly offering a BS degree program in Software Engineering. The mission of the Software Engineering program is to be the leading provider of high quality, practice-oriented software engineering graduates to Northern California, and to enhance engineering knowledge through research and scholarship. The graduates of the program will be skilled in the analysis, design, implementation and deployment of software systems. Graduates will be able to apply these skills to satisfy the requirement of a specific application.

Every student is assigned to a faculty advisor. The program expects every student to consult regularly with their advisors and to obtain the advisor's approval and signature on all required registration forms. Undergraduate transfer students have a special responsibility to obtain approval of transfer credits with the assistance of their advisor during their first semester at San José State University.

The role of program coordinator will alternate between these two departments every three years; the program office and support will be provided by the current program coordinator's home department.

BS Software Engineering

The program prepares students to enter the profession immediately or to go on to graduate school.

The goal of the BS program in Software Engineering is the preparation of software engineers: professionals who develop software products on time, within budget and that meet customer requirements. The course work builds on computer science fundamentals and mathematical principles to cover the design, analysis, verification, validation, implementation, deployment, and maintenance of software systems. The program focuses on practical aspects of building and deploying real software systems in a socially responsible way.

The hallmark of the program provides the students with an educational experience that builds on traditional computer science and engineering, but distinguishing itself in the following ways:

- Courses emphasize the team approach to building software and provide leadership opportunities for every student.
- Courses place an emphasis on software processes and lifecycles.
- Courses include significant learning in management areas such as project planning, resource allocation, quality assurance, testing, metrics, maintenance, configuration management and personnel management.
- A degree that has a stronger emphasis on mathematics and use of engineering methods in software design.

The software engineering curriculum culminates in a year-long capstone sequence where the students work in teams to build a large software system. Students are encouraged to complete a co-operative education experience prior to enrollment in these courses, in order to gain some direct, industrial experience before embarking upon their own project.

A few years after graduation, we expect the students of this program to:

1. Be engaged in successful professional practice in their chosen discipline.

2. Demonstrate personal and professional leadership in their workplace and their community.

3. Demonstrate effective communication in an engineering environment.

4. Utilize formal and informal learning opportunities to maintain and enhance technical and professional growth.

The software industry increasingly requires those with a suitable software engineering background for their cutting edge projects. Graduates with a BS in Software Engineering can expect to find significant opportunities in software development, management, and marketing.

A wide variety of computing equipment is available. Courses are usually conducted using the specialized equipment at the departments, with a variety of sophisticated workstations and state-of-the-art software engineering tools. Students are required to have a laptop with wireless capability.

Freshmen should choose their major when they apply for admission. However, the software engineering program is designed to be flexible for those students who might want to refocus their efforts after beginning in another program. To that end, lower division Software Engineering is quite similar to the Computer Science and Computer Engineering programs.

All College of Engineering undergraduate Majors are required to maintain a Major GPA of 2.0 or above. Major GPA includes all courses required for the major, including math, science and engineering.

Note: Students should periodically review the B.S. Software Engineering Student Guide on the web site or obtain the B.S. Software Engineering Student Guide booklet for the latest information regarding the B.S. in Software Engineering Program.

BS, Software Engineering

Semester Units

General Education Requirements 30
Of the 51 units required by the university, 21 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 27
MATH 030 (*) (3); MATH 031, MATH 032 and MATH 042 (10); MATH 129A (3); MATH 133A or MATH 142 (3); PHYS 050 or PHYS 070 (4); PHYS 051 or PHYS 071 (4)

Required for the Major 73

Engineering Support Courses 9
ENGR 100W or CS 100W (3); ISE 130 or MATH 161A (3); ISE 164 (3)

Required Courses in Software Engineering 57
SE 046A, SE 046B, SE 102, SE 120, SE 131, SE 133, SE 137, SE 146, SE 148, SE 149, SE 157A, SE 157B, SE 165, SE 166, SE 187, SE 195A, SE 195B, CS 151 and SE 172

Approved Upper Division Electives 7
Selected in consultation with the student's advisor

Total Units Required 132

*May substitute MATH 30P for MATH 30.

MS, Software Engineering

See the Computer Engineering Department for the description.

Semester Units

Plan A (With Thesis) 30

Common Core 9
CMPE 202, CMPE 203 and CMPE 272

Area of Specialization 6

Approved Electives 9

Thesis 6

Plan B (Without Thesis) 30

Common Core 9
CMPE 202, CMPE 203 and CMPE 272

Area of Specialization 6

Project or Course-Only Option 15

Project Option 15

Approved Electives 9

Graduate Project 6
CMPE 295A and CMPE 295B

Course-Only Option 15

Approved Electives 15

Comprehensive Exam 0

Total Units Required 30

Technology

College of Engineering

Industrial Studies Building 111
408-924-3190 (Voice)
408-924-3198 (Fax)
avtech@sjsu.edu
www.engr.sjsu.edu/avtech

Professors

Patricia Ryaby Backer
Seth Bates, Chair
Julio Garcia
Mohan Kim
Samuel Obi
James Yu

Associate Professors

Ali Zargar

Curricula

BS, Industrial Technology, Concentration in Computer Electronics and Network Technology

BS, Industrial Technology, Concentration in Manufacturing Systems

Minor, Electronics

Minor, Industrial Technology

Minor, Manufacturing

MS, Quality Assurance

Introduction

The Department of Aviation and Technology offers two undergraduate programs in Industrial Technology (accredited by the Association for Technology Management and Applied Engineering - ATMAE.org): B.S. in Industrial Technology with concentration in Computer Electronics and Network Technology (CENT), and B.S. in Industrial Technology with concentration in Manufacturing Systems (sustainable manufacturing). The department also offers preparation for the teaching credential in Industrial Technology Education. Minors are also available in several fields related to the major. The curricula have as a common purpose the applied exploration of the industrial and management environments to prepare students for technical management positions in industry or to meet the requirements for the teaching/training profession in public schools or industry.

The two Industrial Technology programs are designed to provide students with an opportunity to develop in-depth knowledge and hands-on experience in basic and advanced industrial processes and procedures. In each of the two areas of concentration, students will:

1. Develop in-depth technical knowledge and skills in either sustainable manufacturing or in computer electronics and network technology.

2. Demonstrate strong communication, critical thinking and interpersonal skills.

3. Apply knowledge of current programming languages and techniques to industrial problems.

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

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

6. Develop familiarity and skills in the organization and management of industrial enterprises and activities.

7. Learn about product life cycle, green product design, and how products are designed and manufactured for a sustainable future.

8. Learn to apply knowledge and techniques to the planning and management of industrial and service sector operations.

9. Demonstrate the leadership skills of a technology professional.

The Department also offers graduate work leading to the Master of Science in Quality Assurance.

The MS - Quality Assurance program provides advanced learning experiences for management and quality assurance professionals who want to develop competencies in advanced technology management, statistical quality control and sampling, quality project management, systems' reliability, and an awareness of human factors for implementation in a variety of industrial and service sector environments. Upon completion of the requirements for the MS degree, technical management professionals will have acquired the technical and managerial foundations for the successful development, administration, and management of quality systems.

The graduate degree program provides students with educational experiences and opportunities designed to prepare them for positions of responsibility in industry and business.

The Department of Aviation and Technology's technology-based curricula reflect contemporary industrial issues, innovations, and scientific breakthroughs; each component is structured to prepare technically literate professionals for leadership roles in business and industry.

All College of Engineering undergraduate majors are required to maintain a Major GPA of 2.0 or above. Major GPA includes all courses required for the major, including math, science and engineering.

BS - Industrial Technology, Concentration in Computer Electronics and Network Technology

The Bachelor of Science in Industrial Technology with a concentration in Electronics and Computer Technology is designed to prepare students for technical and management careers in business and industry. Computer Electronics and Network Technology prepares you for a career in the networking, communications, electronics, and computer fields. You will gain knowledge, skills, and practical experiences in networking, analog systems, digital systems, telecommunications, control of electronic industrial processes, instrumentation and automation, electronics manufacturing, and microprocessor-based systems design.

This dynamic and changing field applies a broad preparation in industrial practices, electronic test methods and equipment as well as computer and networking hardware and software to solving problems in the networking, communications, electronics, and computer industries. You will apply skills in industrial management, networking and telecommunications, automation technology; microprocessor systems; control systems; analog and digital systems; and computer simulation processes to design, analyze, and solve problems in the manufacturing and implementation of electronic circuits and systems. Graduates of the BSIT in Computer Electronics and Network Technology will be able to:

1. Use a broad understanding of network and communications technologies to solve challenges in wireless networking and communications.

2. Use current programming languages and methods to solve problems in business and industry.

3. Solve network and electronic systems problems in analytical and creative ways.

4. Apply analog and digital communication techniques to a variety of problems in industry.

5. Use computer-aided design and simulation for the development of electronic systems, printed circuit boards, and integrated circuits.

6. Develop and implement software systems for control of industrial processes in electronics and communications.

7. Integrate the processes of instrumentation and automation in the electronics industry.

8. Use skills and knowledge in the control of electronics and networking manufacturing processes, production scheduling and testing.

9. Apply networking and telecommunications theory and management.

10. Design and analyze electronic circuits and systems.

	Semester Units
General Education Requirements Of the 51 units required by the university, 21 may be satisfied by specified major and support requirements. Consult major advisor for details.	30
American Institutions Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.	(6)
Physical Education	2
Preparation and/or Support for the Major CHEM 030A and CHEM 030B (*) (6); PHYS 002A and PHYS 002B (**) (8); MATH 071 (***) (3); ECON 001B (4); CMPE 030 (****) (3)	24
Electronics and Computer Technology Concentration TECH 031, TECH 060, TECH 062, TECH 063, TECH 065, TECH 115, TECH 145, TECH 160, TECH 163, TECH 165, TECH 167, TECH 169, TECH 190 and TECH 198 (42); ENGR 100W (3)	45
Electives Complete six units from: ME 106, ISE 102, or any advisor approved upper division TECH course(s)	6
Business Minor BUS 090, BUS 142 and BUS 186 (9); BUS 141 or BUS 144 (3); BUS 140 or BUS 145 (3)	15
Total Units Required	122

Please note: The following substitutions to course work are acceptable; however, you must still complete 122 units to be awarded the degree:

*You may substitute CHEM 001A (5 units) for CHEM 030A and CHEM 030B.

**You may substitute PHYS 050 and PHYS 051 (8 units) for PHYS 002A and PHYS 002B.

***You may substitute MATH 030P (5 units) or MATH 030 (3 units) for MATH 071.

****You may substitute CS 049C (3) or CS 049J (3) or CMPE 046 (3) for CMPE 030.

Additional requirement for graduation: To qualify for a baccalaureate degree in Industrial Technology with a concentration in Computer Electronics and Network Technology, students must earn a grade of "C-" or better in each major and support course for credit toward the major.

BS - Industrial Technology, Concentration in Manufacturing Systems

The Bachelor of Science in Industrial Technology with a concentration in Manufacturing Systems 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 with a special focus on green operations and sustainable manufacturing. You will gain knowledge, skills, and practical experiences in innovative manufacturing processes and management, green product design, computer integrated manufacturing, sustainable manufacturing practices, robotics and control systems, and computer aided manufacturing.

This dynamic and expanding field applies computer design tools and other advanced technologies to the solving of problems in manufacturing systems, computer aided design and manufacturing (CAD/CAM), and computer integrated manufacturing (CIM). A new, strong emphasis on green design practices and sustainable operations will add to your basic and advanced industrial manufacturing design knowledge. Graduates of the BSIT in Manufacturing Systems will be able to:

1. Use skills in the planning, design, and implementation of sustainable manufacturing processes.

2. Implement Green Design solutions to industrial and consumer product design challenges.

3. Use understanding of the product life cycle and the management of product manufacturing to direct sustainable operations in industry and business.

4. Design and plan sustainable and green industrial facilities in conformance with LEEDS and other environmental standards.

5. Select and operate computer numerical control and other machines for the production of consumer and commercial products.

6. Use knowledge of the uses, advantages, and disadvantages of current and evolving manufacturing techniques including laser machining, electrical discharge machining, water jet and abrasive water jet machining, and rapid prototyping in modern production systems.

7. Select, analyze and use polymers, composites and other materials in the design of manufactured products.

8. Apply the theory and methods of computer-integrated manufacturing (CIM), including the computer-aided design/computer-aided manufacturing (CAD/CAM) interface to industrial problems and settings.

9. Use the principles of production scheduling and planning in the management of the industrial environment.

10. Use robots and mechatronics for sustainable operations in a modern CIM environment.

11. Apply the latest methods for materials and production management including Just-in-Time (JIT), Materials Resource Planning (MRP), and Lean Manufacturing.

12. Integrate green design, sustainable manufacturing, and recyclable/reusable materials into the design and development of new products.

13. Apply the principles of Lean Manufacturing to manufacturing and soft systems.

14. Apply OSHA and NIOSH principles to facilities design and management.

Semester Units

General Education Requirements 30
Of the 51 units required by the university, 21 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation and/or Support for the Major 24
CHEM 030A and CHEM 030B (*) (6); PHYS 002A and PHYS 002B (**) (8); MATH 071 (***) (3); ECON 001B (4); CMPE 030 (****) (3)

Manufacturing Systems Concentration 45
TECH 020, TECH 025, TECH 031, TECH 041, TECH 045, TECH 046, TECH 060, TECH 065, TECH 115, TECH 140, TECH 145, TECH 147, TECH 149, TECH 190 and TECH 198 (42); ENGR 100W (3)

Minor in Business Management (Required) 15
BUS 090, BUS 142 and BUS 186 (9); BUS 141 or BUS 144 (3); BUS 140 or BUS 145 (3)

Electives 6
Complete six units from: ME 106, ISE 102, or any advisor approved upper division TECH course(s).

Total Units Required 122

Please note: The following substitutions to course work are acceptable; however, you must still complete 122 units to be awarded the degree:

*You may substitute CHEM 001A (5 units) for CHEM 030A and CHEM 030B

**You may substitute PHYS 050 and PHYS 051 (8 units) for PHYS 002A and PHYS 002B

***You may substitute MATH 030P (5 units) or MATH 030 (3 units) for MATH 071

****You may substitute CS 049C (3) or CS 049J (3) or CMPE 046 (3) for CMPE 030.

Additional requirement for graduation: To qualify for a baccalaureate degree in Industrial Technology with a Manufacturing Systems concentration, students must earn a grade of "C-" or better in each major and support course for credit toward the major.

Supplementary Authorizations for Teaching Credential

Students who want to teach Industrial Technology Education but are completing or have completed a credential in another area should apply for a supplementary authorization. See a Department of Aviation and Technology advisor who specializes in teacher preparation for specific content requirements for a supplementary authorization approved by the California Commission on Teacher Credentialing.

Minor - Electronics

Semester Units

Required Courses 6
TECH 060 (3); TECH 062 or TECH 063 (3)

Electronics Electives 6
Complete six units from: TECH 115, TECH 160, TECH 162, TECH 163, TECH 164, TECH 167, TECH 168

Total Units Required 12

Minor - Industrial Technology

Semester Units

Required Courses 9
TECH 031, TECH 145 and TECH 198

Technical Courses 9
At least 9 units of technical courses chosen from either the core or the following concentrations (with a maximum of 6 units of lower division courses)

Total Units Required 18

Minor - Manufacturing

Semester Units

Required Courses 6
TECH 046 and TECH 101

Manufacturing Electives 6
Complete six units from: TECH 040, TECH 045, TECH 140, TECH 145, TECH 147, TECH 148 (at least three units must be upper division)

Total Units Required 12

Graduate Program in Technology

MS - Quality Assurance

The Master of Science in Quality Assurance prepares the student to perform at the masters' level in the areas of Quality Systems development, Six-Sigma quality, as well as ISO and TL 9000 quality system standards. The program emphasizes the acquisition of theoretical and analytical techniques combined with management and communication skills. The curriculum was developed based on best practices in industry; industry quality standards; the Malcolm Baldridge National Quality Award; and the body of knowledge for Quality Engineering, Reliability Engineering, and Quality Management as defined by the American Society for Quality.

Requirements for Admission to Classified Standing

Minimum requirements for admission to the Graduate Division are outlined in the Admission section of this catalog. Current application forms are available through the university's Graduate Studies and Research Office at (408) 283-7500 or www.csumentor.edu.

Students who file for admission to classified graduate standing in the Department of Aviation and Technology must:

1. Submit transcripts from an accredited academic institution which verifies a minimum grade point average of 3.0 in the last 60 upper division university units.

2. Possess a baccalaureate degree from an accredited academic institution in a technical or scientific discipline. Individuals from non-technical disciplines who demonstrate exceptional promise may be conditionally admitted to the graduate program.

3. Present evidence of written and oral communication skills essential to meet the demands of graduate-level study and research. A well-written personal statement in Part B of the Application for Admission is often used for partial verification of these competencies; this statement should discuss the student's career plans and make note of how the master's degree will enhance career objectives. Foreign students must present a TOEFL score of at least 550.

4. Complete or present evidence of an undergraduate intermediate course in statistics which covers chi-square, analysis of variance, correlation and regression.

5. Complete or present evidence of an undergraduate course in the principles of computer technology including programming fundamentals and software applications.

6. Optional: Based upon the student's record, the Graduate Record Examination (GRE) may be required for classified standing. If it is required, the student must complete the GRE (General Test) with a cumulative verbal/quantitative score of at least 1000.

Requirement for Admission to Conditionally Classified Standing

Individuals from non-technical disciplines who demonstrate exceptional promise may be conditionally admitted to the graduate program pending completion of additional undergraduate course work as prescribed by the Department of Aviation and Technology's graduate coordinator. Students who are conditionally classified may seek admission to classified standing only after completing nine to twelve units of graduate level course work with a minimum grade point average of 3.0.

Requirements for Admission to Candidacy

General university requirements for admission to candidacy for the Master of Science degree are outlined in the Academic Regulations section of this catalog. 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 "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Studies and Research website at www.sjsu.edu/gradstudies. After successfully completing a minimum of 12 graduate units, with a minimum grade point average of 3.0, students must finalize their programs of study with the Department of Aviation and Technology's graduate coordinator; this requires the completion of a form entitled - Departmental Request for Approval of Candidacy and Graduate Degree Program - which is forwarded to the Associate Vice President for Graduate Studies and Research.

Precis Presentation

Precis presentation is required prior to submission of the graduate proposal (TECH 298 or 299). Refer to the Deadlines and Due Dates sheet for the date of precis presentation. All students must make arrangements with the graduate coordinator. Each precis shall include the following: introduction, abbreviated review of the literature, statement of the problem, research questions or hypothesis and methodology.

Semester Units

Required Courses 24
TECH 200, TECH 230, TECH 231, TECH 232, TECH 233, TECH 234, TECH 235 and TECH 239

Approved Electives 3

Terminal Project 3

The terminal project proposal should be developed after all other course work is finished or very close to completion (i.e. during the second to last semester before the expected date of graduation).</cstyle:>
TECH 298 (Plan B) or TECH 299 (Plan A)

Total Units Required 30

Television, Radio, Film and Theatre, Department of

College of Humanities and the Arts

Hugh Gillis Hall 100
408-924-4530

Animation and Illustration

Professors

Alice A. Carter
Courtney Granner

Associate Professors

John Clapp

Assistant Professors

David Chai
Raquel Coelho

Radio, Film and Television

Professors

Michael H. Adams
Kimberly K. Massey
Babak Sarrafan

Associate Professors

Scott Sublett

Assistant Professors

Alison McKee

Theatre Arts

Professors

Buddy E. Butler
James K. Culley
Amy Glazer
David Kahn
Karl E. Toepfer

Curricula

BA, Theatre Arts
BA, Theatre Arts, Preparation for Teaching
BA, Radio-Television-Film
BFA, Art, Concentration in Animation/Illustration
Minor, Theatre Arts
Minor, Radio-Television-Film
Minor, Musical Theatre
MA, Theatre Arts

Introduction

The department offers curricula leading to the BA - Radio-Television-Film, BA - Theatre Arts, the BFA Art, Concentration in Animation / Illustration, the MA - Theatre Arts, and a Theatre Emphasis Teaching Credential. Students may advantageously supplement their training in one area with experience in the others. The BA - Theatre Arts degree offers a broadly based liberal arts education and an opportunity for specialized training in acting, directing, playwriting, design/technical theatre and dramatic literature. The BA - Radio-Television-Film offers training and experience in radio, television, film production as well as courses in history, scholarship, and aesthetics of these media. The department operates a full time 24-hour a day radio station, KSJS-FM, providing entertainment, sports and community service to the Bay Area. The MA - Theatre Arts is focused on an interdisciplinary approach to performance which includes seminars and individual studies in theatre, television, radio, film and multimedia. A teaching emphasis in theatre, available through the single subject matter preparation in English, results in a BA - Theatre Arts consisting of an interdisciplinary program with 44 units in theatre and 27 units in English.

The mission of the Department of Television, Radio, Film and Theatre is to prepare students for successful careers in film and stage performance and broadcast media. We see this as indistinguishable from our parallel mission: to nurture ethical, thinking and compassionate human beings. To this end, and given our location in the heart of Silicon Valley, all areas of the Department - Animation/ Illustration, Theatre Arts and Radio/ Television/Film - are committed to the development of artists, educators and scholars of the highest possible caliber.

The importance of our mission cannot be overstated. The single largest contributor to our nation's GNP is the entertainment industry. America needs college-educated, liberal arts-oriented people in the production and distribution of our cultural artifacts and in control of our cultural dialogue.

As new performance technologies emerge, especially computer-based technologies, our department has responded with education that keeps our students on the cutting edge by applying dramatic performance skills to TV, radio, film and multimedia. Students in our programs use computer hardware and software to create performances meant for mass audiences. Students engage in narrative storytelling using both traditional film and digital video. Students are challenged to consider the theoretical and apply the practical.

For complete details on our programs see the website: www.tvradiofilmtheatre.com

Our Facility

We have a fully operational three camera HD TV Studio, 24/7 Radio Station KSJS-FM, 12 postproduction editing suites, 11 audio editing suites, 1 black box theatre, 1 proscenium theatre (both double as film sound stages), full scene shop and costume shop, lighting and sound production facilities, all supported by an outstanding faculty and staff of artists, managers and technicians.

Internships

The RTVF Program students are required to complete an off-campus internship during their junior and/or senior year in order to gain real-world experience and make practical application of what they have learned in major courses. Students are placed in radio and television stations, media production companies and media/communication oriented businesses.

RTVF Portfolio

In addition, throughout their academic program, RTVF students are required to contribute specific production, scholarship, and writing assignments to a portfolio that will be organized and prepared for evaluation during the internship course. This portfolio then can be used to secure employment after gaduation.

Faculty

Television, Radio, Film and Theatre faculty members maintain scholarly and professional involvement across the performance disciplines. Between them, the faculty have published 30 books, three PBS television productions, several feature films, more than 100 articles in scholarly journals or books and have regularly contributed papers, panels and workshops to many professional organizations. Faculty also maintain professional currency as performers, directors, writers, producers, designers, administrators, technicians, consultants and volunteers for Bay Area theatre companies, national and international production companies in theatres, video, film, radio and multimedia.

Public Performances and Production Activity Credit

Production is a vital aspect of each of the department's curricula. Participation in department productions, including plays, touring companies, our award-winning radio station KSJS, and numerous video and film projects, is open to students in all San José State University majors. Roles and technical positions for these productions are assigned through open auditions or through application to the specialists in charge.

Departmental Policy Regarding Admission to Courses

1. Students electing a major in theatre arts or radio-television-film are required to earn at least a "C" in each major course.

2. Theatre arts or radio-television-film majors may repeat a required course for the major twice to pass the course with a grade of "C" or better.

3. Theatre arts or radio-television-film majors will be disqualified from the major upon receiving a grade point average of less than 2.0 for two sequential semesters.

Advisors

The academic advisor guides the student in selection of course work and assists the student in meeting the academic expectations of the department and the university. Students are encouraged to maintain close contact with their advisor since the shared goal is successful completion of the degree requirements within a reasonable amount of time.

Students must meet with their advisor at least once during their first year in order to register for subsequent years. Students are initially assigned to their advisor by the department office administrator; subsequently, students may change their advisor by mutual consent.

Television, Radio, Film and Theatre Honors Program

The honors program in theatre arts is by invitation to the superior senior student who has achieved a minimum standard of 3.5 GPA in major courses and 3.0 overall and who has made a significant contribution to the major area of study.

BA - Radio-Television-Film

The Radio-Television-Film program is designed for students interested in working in 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.

Semester Units

General Education Requirements 42
Of the 51 units required by the university, 9 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 9
RTVF 010, RTVF 110 and TA 100W

Requirements in the Major 30
RTVF 020, RTVF 030, RTVF 031, RTVF 080, RTVF 082, RTVF 120, RTVF 130, RTVF 160, RTVF 180 and RTVF 198

Degree Completion Options 21
Complete twenty-one units from: RTVF 021, RTVF 111, RTVF 121, RTVF 122, RTVF 131, RTVF 132, RTVF 133, RTVF 135, RTVF 161, RTVF 181, RTVF 185, RTVF 199H

Electives 16

Total Units Required 120

BA - Theatre Arts

Semester Units

General Education Requirements 42
Of the 51 units required by the university, 9 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Requirements in the Major 60

Preparation and/or Support of the Major 9
TA 005, TA 100W and TA 127

Major Requirements

Core Courses 33
TA 011, TA 017, TA 051, TA 116, TA 120, TA 128 and TA 151 (21); TA 153 or TA 154 (3); TA 117 or TA 191 (3); TA 170A and TA 198 (6)

Elective Emphasis (Choose One) 18
Choose an emphasis in Performance, Production, Writing Studies, Musical Theatre, Theatre Education or Film. See advisor for a list of approved courses.

Electives 16

Total Units Required 120

BA - Theatre Arts, Preparation for Teaching

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. In addition, this program is approved by the California Commission on Teacher Credentialing (CCTC) as subject matter preparation for a single subject credential in English.

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 index) for information on application and admission to credential programs.

Semester Units

General Education Requirements 42
Of the 51 units required by the university, 9 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major and Supporting Courses 27
ENGL 056A or ENGL 056B (3); ENGL 068A or ENGL 068B (3); ENGL 103, ENGL 105, ENGL 112B and ENGL 125 (12); ENGL 144 or ENGL 145 (3); LLD 163 (3); ENGL 161, ENGL 162, ENGL 163, ENGL 168 or ENGL 169 (3)

Requirements in the Major 45
TA 005, TA 011, TA 048, TA 064, TA 116, TA 151 and TA 167 (21); TA 153 or TA 154 (3); TA 051, TA 168, TA 180 and TA 198 (12); TA 100W (3); Complete two courses from: TA 117, TA 120, TA 127, TA 128 (6)

Electives 4

Total Units Required 120

BFA - Art, Concentration in Animation/Illustration

The award-winning Animation/Illustration program is committed to providing a world-class education at an affordable price. 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. These courses form the foundation upon which students build their skills. Concurrently, students take classes that introduce the study of the principles of both traditional and 3-D animation as well as the physics of motion and the disciplines of 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 are required to complete a professional internship and must pass a milestone portfolio review prior to registering for the first upper-division animation class (ANI 114). In addition to the regular curriculum, students have the opportunity to attend special classes and workshops led by studio professionals and corporate partners.

Semester Units

General Education Requirements 45
Of the 51 units required by the university, 6 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 36
ANI 001, ANI 012, ANI 014 and ANI 024 (12); ANI 028, ANI 050, ANI 051A, ANI 051B, ANI 055, ANI 112A, ANI 112B and ARTH 070B (24)

Requirements in the Major 49

Core Courses 25
TA 005, ANI 113A, ANI 113B, ANI 114, ANI 115, ANI 116, PHYS 123 and ANI 178

Emphasis 15
Choose an emphasis in Animation or Illustration.</cstyle:>
See departmental academic advisor for a list of approved courses.

Upper Division Art or Film History Elective 3

Capstone Requirement 6
ANI 198 and ANI 199

Total Units Required 132

Minor - Radio-Television-Film

	Semester Units
RTVF 020, RTVF 030, RTVF 080 and RTVF 082 (12); Electives, with approval of minor advisor (6) (18)	
Total Units Required	18

Minor - Musical Theatre

	Semester Units
Music MUSC 026A	3
Dance DANC 042A	2
Theatre Arts TA 017	3
Electives At least 6 of the 13 elective units must be upper division	13
Total Units Required	21

Minor - Theatre Arts

	Semester Units
Required Core TA 010 and TA 011	6
Pathways	15
Performance TA 005 or TA 015 (3); TA 017 (3); TA 110 or TA 113 (3); TA 112 or TA 117 (3); theatre arts elective (3)	15
Directing TA 005 (3); TA 051 (3); TA 116 and TA 117 (6); theatre arts elective (3)	15
Design TA 051 (3); TA 151, TA 153 or TA 154 (3); TA 158 or TA 161 (3); theatre arts elective (3)	15
Dramatic Writing TA 005 (3); TA 120, TA 121 or TA 127 (3); TA 128 or TA 129 (3); TA 131 (3); theatre arts elective (3)	15
Total Units Required	21

For additional details and to plan a program, see the music theatre minor advisor. The music theatre minor description and forms are available in the Theatre Arts Department Office.

MA - Theatre Arts

Requirements for Admission

Minimum requirements for admission to the Graduate Division are outlined in the Academic Requirements section of this catalog. Students who meet these requirements may be admitted as conditionally classified in the Theatre Arts Graduate Program until the department's graduate committee approves reclassification to candidacy.

To be admitted to the Department of Television, Radio, Film and Theatre as a conditionally classified graduate student, you must:

1. Meet all minimum university Graduate Division requirements as an undergraduate in theatre arts, radio, television, film, media;

2. Achieve a 3.0 grade point average in your major field of study;

3. Achieve an overall grade point average of 3.0 or above.

Applicants who do not meet the above grade requirements, but exhibit through test scores or artistic achievement the potential for graduate study in Television, Radio, Film and Theatre, may be admitted to conditionally classified standing upon the recommendation of the graduate coordinator.

Portfolio

Applicants must submit to the graduate coordinator a portfolio which documents his or her achievements and aspirations as a student and/or participant in one of the performance disciplines (television, theatre arts, radio, film, or multimedia).

Deficiencies

Deficiencies in academic background, especially in regard to applicants with undergraduate degrees in fields outside of Television, Radio, Film and Theatre, will be determined by the graduate coordinator or department chair. Course work taken to address such deficiencies will not be applied to the Master's degree program.

Requirements for Reclassification to Candidacy

Reclassification to candidacy requires favorable action by both the department's and university's graduate committees. You must:

1. Meet institutional requirements as set forth in the Academic Requirements section of this catalog;

2. Complete the Graduate English Writing requirement. 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 "Competency in Written English" for details.

3. Show aptitude for advanced work in the major area as measured by performance in appropriate academic courses, instructor appraisals, special qualifying tests or other means;

4. Complete TA 260 and receive acceptance of Thesis Proposal or Proposed Course of Study for Comprehensive Examination from the department graduate committee.

Completing Requirements for the Master's Degree

Thesis (Plan A) or Comprehensive Examination (Plan B) Options

With the assistance of a faculty advisor, students develop a proposed Master's degree program according to Plan A or Plan B, as outlined below. The content will be determined by the individual student's background, area of concentration and thesis or examination topic. All programs will include a nine-unit core: TA 200 which must be taken at the first opportunity after enrollment, TA 201, and TA 260 and additional 21 units to include a minimum of 15 units of 200-level courses of which 6 units must derive from the cycle of seminars offered by the department (TA 220, 221, 241, 270, 275). Additional 100- or 200-level courses related to the degree objective will complete the program. Each student must demonstrate competence in written English.

Plan A (with Thesis)

TA 299 Plan A, the thesis option, will be reserved for students with proven success in academic research and scholarly writing. To pursue the thesis option, students must secure program approval, nomination by a TRFT Department faculty member, and approval of Thesis Proposal by the department graduate committee. The program will include a maximum of four units for the thesis. See Thesis section of this catalog.

A thesis committee has the option of terminating the thesis option if, in the opinion of the three readers, the candidate is incapable or unwilling to write an acceptable thesis in a reasonable amount of time. In that case, if the student wishes to complete the degree the student will be required to take the Plan B - Comprehensive Examination.

With Plan A the thesis candidate must successfully complete an oral examination focusing on the thesis.

Plan B (Research Project with Comprehensive Examination)

TA 298B students complete a Course of Study for Comprehensive Examination according to the individual student's background, area of concentration and academic program. The program and Course of Study must be approved by the department graduate committee and will include the development of a specified reading list. In addition, in order to complete the degree requirements, Plan B students must submit a scholarly article or conference paper for consideration by a peer reviewed publication or professional association.

The Comprehensive Examination provides an opportunity for the student to demonstrate a thorough grasp of history, theory, practice and pedagogy within and across the disciplines of Theatre, Radio, Film and Television. On the exams, students are expected to demonstrate a familiarity with theoretical aesthetic and historiographical issues, and to follow acceptable rules of grammar, spelling and academic style in presentation. The examination is scheduled toward the end of the fall and spring semesters and students must pass all sections of the examination within three attempts or no degree will be awarded.

With Plan B the candidates must successfully complete an oral defense based on the written examination.

	Semester Units
Required Courses TA 200, TA 201 and TA 260	9
Seminars Complete two courses from: TA 220, TA 221, TA 241, TA 270, TA 275	6
Electives Approved 100- and 200-level electives	11-14
Thesis TA 299 (Plan A) or TA 298 (Plan B)	1-4
Total Units Required	30

A Culminating Examination is required.

Plan A requires Oral Defense of the thesis.

Undergraduate Studies

Curricula

Minor, Community Service Learning

Introduction

University Studies provide opportunities for students to have integrated and applied interdisciplinary experiences. The courses offered by the Undergraduate Studies Office are to promote leadership among students.

Minor - Community Service Learning

Semester Units

CSL Core Requirements 9

EDUC 157 may be taken under the following prefixes: COMM, ENGR, HA, SCI, or APSC.</cstyle:>

SOCI 080, SOCI 057 and EDUC 157

CSL Upper Division Requirements 9

Nine integrated units approved by a department or college advisor, and by the AVP of Undergraduate Studies or designee. Six of these units must be in courses approved as CSL courses under university policy.

Total Units Required 18

Urban and Regional Planning Department

College of Social Sciences

Washington Square Hall 216
408-924-5882
urbplan@sjsu.edu

Professors

Dayana Salazar, Chair

Associate Professors

Asha Weinstein Agrawal
Shishir Mathur
Hilary Nixon

Curricula

Minor, Urban Studies
Certificate, Applications of Technology in Planning
Certificate, Community Design and Development
Certificate, Environmental Planning
Certificate, Transportation and Land Use Planning
MUP, Master of Urban Planning

Introduction

As our nation and the world become increasingly urban in character, there is growing interest in urban and regional planning. Planners work to manage and guide the critical issues of urban and regional growth and change, as well as to promote environmental and social balance. Planners strive to encourage orderly growth and development responsive to the present and future needs of society. Careers for urban and regional planners exist in city, county, regional, state and national government, private consulting firms, nonprofit organizations, and research and academic institutions.

The Department of Urban and Regional Planning is uniquely poised to educate future and current planning professionals and to generate innovative research to further the discipline. The university is located in downtown San José, the largest city in Northern California and the capital of Silicon Valley, one of the most rapidly changing and socially complex metropolitan areas of the nation. The department takes advantage of its urban location by collaborating with local planning agencies and through hands-on work with community-based organizations. Faculty and students engage in public service projects designed to assist local communities in addressing topical planning issues, while also providing students with real-world professional experience. Through these projects and other course work, students become familiar with cutting-edge planning concepts and applications that are evolving locally in the Silicon Valley and the larger Bay Area.

In addition, departments across SJSU offer courses in a wide range of fields that complement the offerings within the Urban and Regional Planning Department, such as design, engineering, environmental studies, ethnic studies, geography, public administration, social work, and sociology.

The department offers an undergraduate minor in Urban Studies, four graduate certificate programs, and a Master of Urban Planning (MUP) degree.

Minor - Urban Studies

The minor in Urban Studies 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.

	Semester Units
Required Course URBP 101	3
Department Electives Complete nine units from: URBP 110, URBP 111, URBP 120, URBP 123, URBP 124, URBP 127, URBP 133, URBP 136, URBP 142, URBP 145, URBP 148, URBP 151, URBP 152, URBP 169, URBP 175, URBP 178, URBP 179, URBP 185 (other courses may be substituted with permission of advisor)	9
Other Elective CE 121, ANTH 125, ECON 166, ENVS 010, ENVS 124, ENVS 187, GEOG 105, POLS 103, STAT 095 or SOCI 161 (other courses may be substituted with permission of advisor)	3
Total Units Required	15

Certificates

The Department of Urban and Regional Planning at San José State University offers four certificate programs which lead to specialization in Community Design and Development, Environmental Planning, Transportation and Land Use Planning, and Applications of Technology in Planning.

The certificate programs are open to upper-division undergraduate or 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 the certificate program through SJSU's Open University. To earn a certificate, students must complete a total of either eighteen or nineteen units of course work, depending on the certificate. If course work is taken through Open University, a maximum of 9 units may be applied towards the MUP degree.

For detailed information on these programs, see the department's website at http://www.sjsu.edu/urbanplanning/ or contact the department's Graduate Student Advisor.

MUP - Master of Urban Planning

The MUP program trains skilled professionals who graduate with a strong education in general planning practice and theory as well as specialized training in planning sub-fields. The program allows students to develop professional skills in an area of specialization such as Community Design and Development, Environmental Planning, Transportation and Land Use Planning, or Applications of Technology in 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.

Requirements for Admission to Classified Standing

Minimum requirements for admission to the Graduate Division are outlined in the Admission section of this catalog. Students seeking classified status in the Master of Urban Planning program are expected to contact the department as well as Graduate Studies and Research and to:

1. Present a scholarship record satisfactory to the departmental admissions committee.

2. Show promise of success in the program and aptitude for graduate work as judged by the department's admissions committee.

3. Submittal strongly recommended, but not required, of scores on the Aptitude Test of the Graduate Record Examination.

Students from a wide variety of academic backgrounds may be admitted to the program.

Requirements for Admission to Conditionally Classified Standing

The department may grant admission in conditionally classified standing in unusual circumstances.

If the student finds that he or she needs to take background courses during the period of study, it may prolong fulfillment of the regular curriculum. Credits earned in this connection may not be counted towards the minimum requirements for the master's degree. To continue in the program, students are required to maintain a "B" (3.0) average for all work taken in graduate status.

Requirements for Admission to Candidacy for the Master of Urban Planning Degree

To be admitted to candidacy for the Master of Urban Planning degree, students must meet the general all-university requirements for admission to candidacy outlined in the Academic Regulations section of this catalog. In addition, the following departmental requirement applies: Candidates must pass the Writing Standards Test at SJSU and demonstrate competency in written English as a condition for advancement to candidacy as detailed in the SJSU catalog section titled "Competency in Written English."

Requirements for the Master of Urban Planning Degree

The course requirements for the master's degree are:

	Semester Units
Core Planning Seminars URBP 200, URBP 204, URBP 225, URBP 236 and URBP 297P	17
Core Laboratory and Fieldwork Courses URBP 201 and URBP 275G	9
Electives	12
Three electives chosen from Urban and Regional Planning specializations.</ cstyle:>	
Community Design and Development URBP 103, URBP 145, URBP 203, URBP 220, URBP 223A, URBP 223B, URBP 228, URBP 231, URBP 232, URBP 233, URBP 250, URBP 275, URBP 275D, URBP 275E	
Environmental Planning and Land Use URBP 103, URBP 185, URBP 220, URBP 227, URBP 240, URBP 255, URBP 256, URBP 260, URBP 275, URBP 278	
Transportation and Land Use URBP 103, URBP 211, URBP 220, URBP 226, URBP 250, URBP 255, URBP 256, URBP 275, URBP 278	
Applications of Technology in Planning URBP 148, URBP 248, URBP 276, URBP 278, URBP 279	
Elective One additional elective chosen from the above list or another class with approval of the Graduate Advisor	4
Thesis, Project or Planning Report URBP 299 (Plan A) or URBP 298A and URBP 298B (Plan B)	6
Total Units Required	48

All electives must be 100- or 200-level courses as arranged and approved in conference with the student's advisor. Electives to be taken will depend on the student's background and interests.

Students must earn a "B" or better grade in a 100-level class in order for the department to give credit for that class towards the MUP degree.

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, though the SJSU Office of Graduate Records does not include the "NC" when calculating the student's GPA.
- Students who receive an "NC" in URBP 298A or URBP 298B can only enroll again in the class 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 be removed from Administrative-Academic Probation 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.

World Languages and Literatures

College of Humanities and the Arts

Clark Hall 421
408-924-4602

Professors

Jean-Luc Desalvo
Anne Fountain
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Associate Professors

Marianina Olcott

Assistant Professors

Damian Bacich
Eleanor Marsh
Juan Matallana
Fu Tan
Yasue K. Yanai
Yao Yao

Curricula

BA, Chinese
BA, French
BA, French, Preparation for Teaching
BA, German
BA, Japanese
BA, Spanish
BA, Spanish, Preparation for Teaching
Minor, Chinese
Minor, French
Minor, German
Minor, International Business
Minor, Italian
Minor, Japanese
Minor, Portuguese
Minor, Spanish
MA, French
MA, Spanish

Introduction

Do you want to connect with the world through your own line of communication? Learning another language will enable you to understand the complexities of intercultural communication. The study of world languages should lead you, through comparative analysis, to a better understanding of your own language and the cultural and thought patterns it reflects and engenders. It will broaden your understanding of the world beyond the confines of your own linguistic and cultural milieu and expose you to new patterns of language and thought. In addition, the study of world languages will help you to internationalize your professional profile by affording you a strong competitive advantage in pursuing opportunities in today's global economy and culture.

To that end, the Department of World Languages and Literatures offers majors in five of the most useful and widely spoken languages in the world: Chinese and Japanese for a direct connection with Asia, and French, German and Spanish to link up with Europe, Africa and Latin America. In addition to our majors and minors in these languages, the department offers minor programs in Italian, Portuguese and Russian as well as language and culture courses in Arabic, Hebrew, Punjabi and Vietnamese. We connect in time with our classical traditions through our offerings in Greek and Latin.

In association with the international programs of the CSU system, our department offers you the opportunity to study abroad. While there, you will perfect your language skills and deepen your understanding of the people and culture associated with the language you have chosen to study. The department also has the means to help qualified students finance their studies with generous stipends from our Meta Marion Goldsmith Scholarship Fund.

To accommodate the special needs of some of our students, we offer individualized, self-paced courses in several of our programs. To service the needs of high schools and community colleges in our area, we offer subject matter preparation programs for the single subject credential in Chinese (Mandarin), French, and Spanish as well as Master's of Arts degrees in French and Spanish.

Our faculty is among the most diverse imaginable by virtue of our multicultural origins and backgrounds, multilingual skills and multifaceted training. So too are our students, which makes for an exciting mixture and convergence of talents and interests. The closeness of faculty and students in our department arises from this shared diversity as well as from the continual contact and exchange required by the methodology of language instruction. As a consequence, our academic advisement is highly personalized. Almost without exception, advisees have also been students in one or more of their advisor's classes.

Teaching is generally the career of choice for most of our graduates, but they also follow career paths leading to employment as translators and interpreters; civil servants for local, state and federal agencies; agents for tourism and the leisure service industry; reporters, journalists, broadcasters and publishers for the mass media and communications industry, and myriad other occupations in national and international business and finance.

General Undergraduate Information

Entering a Program

Upon declaring or entering one of our majors, students must meet with an advisor to discuss placement and have the hold on registration lifted in order to enroll in classes.

Placement Examinations

These exams will be given in our Media Center (Clark Hall 208) at the beginning of each semester to students who have studied beyond the second year in high school but have not taken courses at the college level. Those who have will enroll in the course for which they qualify on the basis of college units accumulated. The placement test is not a full proficiency test.

Limits on Credit

Students whose secondary education was in a language other than English may not receive credit, either by enrollment or examination, for beginning language and conversation courses in that language.

Transfer of Units, Unit Requirements

With departmental approval, students may transfer units earned at community colleges and other universities. Whatever reduction in major and minor requirements is allowed on the basis of previous training, a minimum of 24 units of college work in the language is required for the major and 12 units for the minor. Of these minimums, a student must complete at least 12 units for the major and three units for the minor at SJSU.

Minor Waivers

Economics, journalism and administration of justice majors may satisfy the requirement for a minor by taking 18 units of a world language.

Requirements for the BA Degree

All majors must complete 120 units for the degree. They are also required to complete a minor within those units. A minor in a second language is recommended, which will simultaneously satisfy the requirement of one year of a second language.

Proficiency Examination

A proficiency examination in the language is required of candidates for a teaching credential and is a prerequisite for enrollment in any graduate course.

BA - Chinese

Semester Units

General Education Requirements 45
Of the 51 units required by the university, 6 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 16-20
CHIN 025A and CHIN 025B (or equivalent) (10); One year of a second world language, ancient or modern (or equivalent; conversational Cantonese fulfills this requirement) (6-10)

Requirements in the Major 30
CHIN 101A, CHIN 101B, CHIN 102 and FORL 100W (12); Complete six courses from: CHIN 110, CHIN 111, CHIN 120A, CHIN 120B, CHIN 130, CHIN 132, CHIN 140, CHIN 141 (18)

Required Minor 12-21

Electives 2-15

Total Units Required 120

BA - French

Semester Units

General Education Requirements 45
Of the 51 units required by the university, 6 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 15-19
FREN 025A, FREN 025B and FREN 025C (or equivalent) (9); One year of a second world language, ancient or modern (or equivalent) (6-10)

Requirements in the Major 33
FREN 101A, FREN 101B, FREN 101C and FORL 100W (12); FREN 102A or FREN 102C (3); Complete six courses from: FREN 105, FREN 110, FREN 132, FREN 120A, FREN 120B, FREN 140A, FREN 140B, FREN 160, FREN 170 (18)

Requirements in the Minor 12-21

Electives 0-13

Total Units Required 120

BA - French, Preparation for Teaching

This major is designed for students interested in teaching world languages in high school or middle school. The following course work satisfies San José State University's requirements for a BA in French.

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 index) for information on application and admission to credential programs.

Semester Units

General Education Requirements 45
Of the 51 units required by the university, 6 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major and Supporting Courses 15-19
FREN 025A, FREN 025B and FREN 025C (or equivalent) (9); One year of a second world language (or equivalent) (6-10)

Requirements in the Major 36
FREN 101A, FREN 101B, FREN 101C, FREN 102A, FREN 102C, FREN 105 and FREN 110 (21); FORL 100W (3); Complete four courses from: FREN 120A, FREN 120B, FREN 132, FREN 140A, FREN 140B, FREN 160 (including two from 120A, 120B, 140A, 140B, 170) (12)

Minor 12-18
A minor in another world language is recommended.

Electives 0-10

Total Units Required 120

BA - German

Semester Units

General Education Requirements 48
Of the 51 units required by the university, 3 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 16-20
GERM 025A and GERM 025B (or equivalent) (10); One year of a second world language, ancient or modern (or equivalent) (6-10)

Requirements in the Major 28-29
GERM 101A, GERM 101B, GERM 102A and FORL 100W (14); Complete four courses from: GERM 120A, GERM 120B, GERM 140A, GERM 140B, GERM 160 (12); GERM 105, GERM 110 or GERM 160 (2-3)

Requirements in the Minor 12-21

Electives 0-14

Total Units Required 120

BA - Japanese

Semester Units

General Education Requirements 48
Of the 51 units required by the university, 3 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 16-20
JPN 025A and JPN 025B (or equivalent) (10); One year of a second world language, ancient or modern (or equivalent) (6-10)

Requirements in the Major 29
JPN 101A, JPN 101B, JPN 102 and FORL 100W (14); Complete five courses from: JPN 103, JPN 107, JPN 110, JPN 120A, JPN 120B, JPN 130, JPN 140A, JPN 140B, JPN 160 (15)

Requirements in the Minor 12-21

Electives 0-13

Total Units Required 120

BA - Spanish

Semester Units

General Education Requirements 45
Of the 51 units required by the university, 6 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major 16-20
SPAN 025A and SPAN 025B (or equivalent) (10); One year of a second world language, ancient or modern (or equivalent) (6-10)

Requirements in the Major 32

Core 14
SPAN 101A, SPAN 101B and FORL 100W (11); SPAN 102A or SPAN 102B (3)

Upper Division Courses 18

Literature 6
Complete two courses from: SPAN 115, SPAN 120A, SPAN 120B, SPAN 140A, SPAN 140B, SPAN 160C

Linguistics 6
Complete two courses from: SPAN 105, SPAN 110, SPAN 160B

Additional Courses 6
Complete two courses from: SPAN 111, SPAN 160A, SPAN 170 (or any of the above literature, linguistics, or culture courses not already taken)

Requirements in the Minor 12-21

Electives 0-13
Electives must be selected with advisor approval.

Total Units Required 120

BA - Spanish, Preparation for Teaching

This major is designed for students interested in teaching world languages in high school or middle school. The following course work satisfies San José State University's requirements for a BA in Spanish.

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 index) for information on application and admission to credential programs.

Semester Units

General Education Requirements 45
Of the 51 units required by the university, 6 may be satisfied by specified major and support requirements. Consult major advisor for details.

American Institutions ..... (6)
Of the 6 units required by the university, all may be satisfied within general education requirements as specified in the schedule of classes.

Physical Education 2

Preparation for the Major and Supporting Courses 16-20
SPAN 025A and SPAN 025B (or equivalent) (10); One year of a second world language (or equivalent) (6-10)

Requirements in the Major 35
SPAN 101A, SPAN 101B, SPAN 102A, SPAN 102B, SPAN 105 and SPAN 110 (20); FORL 100W (3); Complete two courses from: SPAN 115, SPAN 120A, SPAN 120B, SPAN 140A, SPAN 140B, SPAN 160C (6); Complete two courses from: SPAN 111, SPAN 160A, SPAN 160B, SPAN 170 (or any of the above literature, linguistics and culture courses not already taken) (6)

Minor 12-21
A minor in another world language is recommended.

Electives 1-6

Total Units Required 120

Minor - Chinese

Semester Units

Preparation for the Minor 10
CHIN 001A and CHIN 001B

Requirements in the Minor 19
CHIN 025A, CHIN 025B, CHIN 101A, CHIN 101B and CHIN 102

Total Units Required 29

Minor - French

Semester Units

Preparation for the Minor 10
FREN 001A and FREN 001B

Requirements in the Minor 18
FREN 025A, FREN 025B, FREN 025C, FREN 101A, FREN 101B and FREN 101C (15); FREN 102A or FREN 102C (3)

Total Units Required 28

Minor - German

Semester Units

Preparation for the Minor 10
GERM 001A and GERM 001B

Requirements in the Minor 21
GERM 025A, GERM 025B, GERM 101A and GERM 101B (18); GERM 102A or GERM 102B (3)

Total Units Required 31

Minor - Italian

Semester Units

Preparation for the Minor 10
ITAL 001A and ITAL 001B

Requirements in the Minor 20
ITAL 002, ITAL 101A, ITAL 101B and ITAL 102 (14); Six additional upper division units in Italian (6)

Total Units Required 30

Minor - Japanese

Semester Units

Preparation for the Minor 10
JPN 001A and JPN 001B

Requirements in the Minor 21
JPN 025A, JPN 025B, JPN 101A, JPN 101B and JPN 102

Total Units Required 31

Minor - Portuguese

Semester Units

Preparation for the Minor 10
PORT 001A and PORT 001B

Requirements in the Minor 18
PORT 020A, PORT 020B, PORT 101A, PORT 101B, PORT 102A and PORT 102B

Total Units Required 28

Minor - Spanish

Semester Units

Preparation for the Minor 10
SPAN 001A and SPAN 001B

Requirements in the Minor 21
SPAN 025A, SPAN 025B, SPAN 101A and SPAN 101B (18); SPAN 102A or SPAN 102B (3)

Total Units Required 31

Minor - International Business

Students in International Business have the option to select one of the following world languages: Chinese, French, German, Japanese and Spanish for a minor. International Business 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. For further information about required courses, please see the World Languages and Literatures website: http://www.sjsu.edu/wll/programs/intlbusminors/

- Chinese.....16 units
- French.....15 units
- German.....17 units
- Japanese.....17 units
- Spanish.....17 units

MA - French/Spanish

Requirements for Admission to Classified Standing

Minimum requirements for admission to the Graduate Division are outlined in this catalog. In addition, classified standing requires:

1. A bachelor's degree (or its equivalent, as assessed by the department), with a major in the language selected for the MA program, and including at least 15 units of upper division work in the major with a grade of "B" or better.

2. Satisfactory performance on the proficiency examination in the language selected for the MA program, unless such an examination is waived.

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 meet one or more of the requirements for admission in classified standing.

Requirements for Admission to Candidacy for the MA - French or Spanish

Admission 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 demonstrate competency in written English as a condition for advancement to candidacy. Please refer to the SJSU catalog section titled "Competency in Written English" for details. For graduate courses that meet the competency in written English requirement, please refer to the Graduate Admissions and Program Evaluations website at www.sjsu.edu/gape.

Completing Requirements for the MA - French or Spanish

The minimum program for a Master of Arts degree includes the following:

A. The 30 unit program for a Master of French or Spanish requires at least 21 semester units of approved 100- or 200-level courses beyond the baccalaureate degree in the candidate's language of concentration, including no less than 15 semester units in courses numbered in the 200's (approved upper division courses not taken to meet a requirement for the BA degree in a world language at San José State University may be taken in the Graduate Division).

B. Additional 100- or 200-level courses in the Department of World Languages and Literatures or in other departments, closely related to the degree objective and chosen with the advisor's consent, to complete the minimum 30-unit program.

C. At the discretion of the department, one of the following:

1. Plan A - A thesis with an oral examination based on its contents and related themes.

2. Plan B - Final comprehensive written and oral examinations conducted in the candidate's target language.

D. Demonstration of competence in written English.

MA - French

Semester Units

Required Courses..... 18
At least 18 units from the following: FREN 201, FREN 202, FREN 210, FREN 220, FREN 240, FREN 250, FREN 260, FREN 270, FREN 280, FREN 298

Electives 9
9 units of departmental graduate advisor approved: FREN 120A, FREN 120B, FREN 132, FREN 140A, FREN 140B, FREN 160, FORL 200, FORL 205

Thesis or Comprehensive Exam 3

Plan A (Thesis) 3
FREN 299

Plan B (Comprehensive Exam).....3
One additional course from elective list above

Total Units Required 30

MA - Spanish

Semester Units

Required Courses 18

At least 18 units from the following: SPAN 201, SPAN 202, SPAN 210, SPAN 220, SPAN 225, SPAN 250, SPAN 260, SPAN 270, SPAN 280, SPAN 298

Electives 9

9 units of departmental graduate advisor approved: SPAN 111, SPAN 120A, SPAN 120B, SPAN 132, SPAN 140A, SPAN 140B, SPAN 160A, SPAN 160B, SPAN 160C, SPAN 170, FORL 200, FORL 205

Thesis or Comprehensive Exam 3

Plan A (Thesis) 3

SPAN 299

Plan B (Comprehensive Exam) 3

One additional course from elective list above

Total Units Required 30