

The San José State University Catalog is published every two years and is a joint project of Undergraduate Studies, Graduate Studies and Research, and Enrollment and Academic Services.

Although every effort has been made to assure the accuracy of the information in this catalog, students and others who use this catalog should note that laws, rules, and policies change from time to time and that these changes may alter the information contained in this publication. Changes may come in the form of statutes enacted by the Legislature, rules and policies adopted by the Board of Trustees of the California State University, by the Chancellor or designee of the California State University, or by the President or designee of the campus. It is not possible in a publication of this size to include all of the rules, policies and other information that pertain to students, the institution, and the California State University. More current or complete information may be obtained from the appropriate department, school, or administrative office.

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Non-Discrimination Policies

San José State University does not discriminate on the basis of accent, age, ancestry, citizenship status, color, creed, disability, ethnicity, gender, marital status, medical condition, national origin, race, religion or lack thereof, sex, sexual orientation, transgender and veteran's status. This policy applies to all SJSU student, faculty and staff programs and activities.

Questions regarding this policy should be directed to the Office of Equity and Diversity, 408-924-1115.

Disabled Access

All San José State University classes are wheelchair accessible. If you have other needs regarding accommodations, please contact the Disability Resource Center. Telephone: 408-924-6000; TTY 408-924-5990; Fax: 408-924-5999.

Campus Safety Statistics

A campus safety report is available at www.sjsu.edu/safetyreport/ or by calling 408-924-2172.

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San José State University

**FALL 2008 – SPRING 2010
CATALOG**

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The San José State University Catalog 2008 – 2010

The 2008-2010 SJSU Catalog constitutes San José State University's document of record and answers your basic questions about SJSU, its policies and procedures, degree and program requirements, administration, student rights and responsibilities and other pertinent information. While every effort is made to ensure the correctness and timeliness of information contained in the SJSU Catalog, the university cannot guarantee its accuracy. Changes may occur, for example, in course descriptions; teaching and administrative staff; curriculum, degree, and graduation requirements; and fee information.

The departmental websites referenced in this catalog may be maintained by independent operators and do not necessarily reflect approved curricula and course information. In addition, departmental advising sheets may not be the most current and accurate information. Consult the official online catalog for the most current, officially approved courses and curricula.

All information in this catalog was reviewed and approved by the respective College Dean and/or Department Chairperson. Contact the individual college, department, program, or administrative office for further information.

Changes in Rules and Policies

Students and others who use this catalog and other university publications should note that laws, rules, and policies change from time to time and that these changes may alter the information contained in this publication. Changes may come in the form of statutes enacted by the Legislature, rules and policies adopted by the Board of Trustees of the California State University, by the Chancellor or designee of the California State University, or by the President or designee of the campus. It is not possible in a publication of this size to include all of the rules, policies and other information that pertain to students, the institution, and the California State University. More current or complete information may be obtained from the appropriate department, school, or administrative office.

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

For the most current info

The SJSU Schedule of Classes (<http://info.sjsu.edu/home/schedules.html>) is recommended as an up-to-date source of information on course offerings, general education, registration procedures, schedule of fees and other pertinent information on policies and procedures.

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FAQs

Why is the catalog useful?

If you maintain continuous enrollment at SJSU, these requirements, policies and procedures will be your road map to graduation. Of course, should you change your major or minor, you will be held to new requirements. We may also substitute new requirements for discontinued courses.

Should I keep this catalog?

Yes, unless you break your attendance, this catalog will be with you until you graduate. Keep the catalog as part of your personal files.

How do I get admitted to SJSU?

In the Policies and Procedures section at the end of this book are sections with detailed requirements for freshman, transfer and graduate admissions. Information about required courses, grade point averages and test scores are included.

What if I am from a country outside of the U.S.?

Special instructions for international students are included in the admission information for undergraduates and graduate students.

What is expected of SJSU students?

See the section titled Student Rights and Responsibilities for an overview of your rights and responsibilities. Your academic requirements are outlined in the Scholastic Requirements section.

What are the majors and programs offered by SJSU?

A comprehensive listing of all baccalaureate and graduate degrees, certificates and credentials concludes this section.

Does the catalog explain how SJSU majors rank?

There is no reliable or agreed upon ranking system for determining the quality of undergraduate majors. We suggest you begin your search by looking at the accreditation of the campus and our individual majors. When a major achieves agency accreditation, it generally means that the program's quality is well above standard.

What is the relationship between SJSU policy and CSU policy?

Requirements for admission, including tests; most fees; rules regarding residency; and most student conduct regulations are set by the Trustees of the CSU. Local SJSU regulations include degree requirements, General Education standards, registration and records policy, among many others.

Who are the leaders of SJSU?

In the Officers and Administrators section of the catalog, you will find a listing of the people who make up the campus administration.

Where do I go to get started?

We suggest that most new visitors to campus stop by the Student Services Center, Ninth and San Fernando Streets. Students who need to have policies, procedures and other regulations interpreted can begin the process here. Most forms, petitions, and advising tools are located here. Campus tours begin in the Welcome Center at the King Library.

How do I find out where and when the course is offered and who will teach the course?

Each semester, you will need to review the SJSU Schedule of Classes which lists all courses offered that term, the location, time schedule and instructor. In addition to the course schedule, important information is included that updates this catalog.

How to read the degree requirements and course descriptions

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. Analytical chemistry or biochemistry may be chosen as areas of concentration.

For every major listed, there is a page devoted to directory information for the home department. The name, campus location, phone number, curricula offered and faculty are listed here. A brief description of the department follows including any distinctive features of the department.

Each undergraduate major begins with **General Education, American Institutions and Physical Education** requirements.

These are courses required of all students, regardless of major

Supporting courses are foundation courses, usually found outside of the department, that prepare students for more advanced work in the major. A listing of each course and the unit (credit) value of each course or sequence is listed

Capstone courses are special topics that draw upon your previous studies in the major

Electives in the major allow you to choose areas of personal interest. To enhance your overall knowledge, electives are often best selected with your advisor

	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.....	28-32
MATH 30, MATH 31 and MATH 32 (10); PHYS 70, PHYS 71 and PHYS 72 (12); GERM 1A and GERM 1B (10), RUSS 1A and RUSS 1B (10) or approved computer science courses (6)	
Requirements in the Major	52-56
Required Core	25-29
CHEM 4A and CHEM 4B (10) or CHEM 1A, CHEM 1B and CHEM 55 (14); CHEM 100W, CHEM 112A, CHEM 112B, CHEM 113A, CHEM 113B and CHEM 120S (15)	
Additional Required Courses	20
CHEM 136, CHEM 145, CHEM 145L, CHEM 155, CHEM 161A, CHEM 161B and CHEM 162L	
Capstone Course	3
CHEM 114, CHEM 127, CHEM 131B or CHEM 146	
Chemistry Electives	4
Approved upper division chemistry electives	
Electives	3-11
Total Units Required for Degree	132

Required courses for the major sometimes include a "core" of courses that are prerequisite to advanced courses in the major.

Name of the home department — **Chemistry**

Class level (lower, upper or graduate division) — Lower Division

Course prefix, number and title sequences can be of two or three semesters in length

Course description briefly outlines what will be covered in the course

Prerequisites list any prior course work, knowledge, permission or other criteria needed before you are eligible to take the course

Notes list any additional fees or information you need to prepare for the course

GE Designator — many courses have an additional letter indicating that it meets a General Education requirement

CHEM 001A. General Chemistry

Basic principles: Atomic structure, chemical bonding, oxidation-reduction, solutions and organic chemistry. Lab emphasizes descriptive chemistry and includes a systematic study of qualitative inorganic analysis.

Prerequisites: High school chemistry or CHEM 10; two years of high school algebra, Math 6D or Math 6L; satisfactory score on the Chemistry Placement Exam.

Lecture 3 hours/lab 6 hours

Lab fee required

CHEM 1A+B = CAN CHEM SEQ A

GE: Z

5 units

Class Grading Policies

Unless otherwise noted, **A, B, C, D, F** is the **basic grading policy**.

Other grading schema, including "A,B,C/No Credit" "Credit/No Credit" and "Report in Progress," **will be noted here**.

Lecture, lab indicates the method of instruction

California Articulation Number (CAN), if applicable, means that the course can easily be transferred from campus to campus in California

Number of units (credit) earned in the course

Year-by-Year

THE BIG TRANSITION

Frosh year one

Before you graduate from High School...

Start early. **"Step-to-College"** is an inexpensive way to take challenging courses and earn college credit while still attending high school.

Take placement exams in English and mathematics. Take them seriously. Review high school algebra, geometry and intermediate algebra, basic grammar and other writing skills.

Take any required exams before you graduate.

Transition to college

After you take the necessary **placement exams**, we **register** you in the appropriate courses. This process is so critical to your success that we require you to come in person.

Orientation is more than just learning your way around: It's understanding the key services and the people who work on your behalf. It's understanding the partnership between you and the university.

Getting an orientation to campus is for **transfers from community college**, too. There are differences between the two-year and four-year college experience, especially in the way we organize advising.

Seek out **advising** from your **major department**.

Understand the remaining GE requirements and seek out courses that match your interests.

What to bring to college:

- An open mind
- Common sense
- A positive attitude
- Respect for others
- Your manners

We're here for you... Just meet us half way -

- Career Center
- Counseling Services
- Disability Resource Center
- Educational Opportunity Program
- Financial Aid and Scholarships
- Greek Life – Fraternities and Sororities
- International Programs and Services
- Academic Assistance Resource Center
- Peer Mentor Program
- Student Health Center
- Student Involvement
- University Housing Services

Immerse yourself in the **first year experience**. Your first semester schedule is customized for you. Enroll in a **MUSE** course and feel at home in the intellectual and social life of the university.

For frosh ready to participate, there is a special two year **Humanities Honor's Program**, an integrated survey of Western culture.

Live on campus. To promote on-campus living, new residence halls are under construction. Start making the transition to independent living.

You've had **peer mentors** through high school; you'll need them in college, too. An experienced student can help you navigate the rest of your stay with us.

If you have a major, take advantage of the wisdom and sage advice of your **major advisor**. If you're undeclared or unsure, meet with advisors in the Student Services Center. Shop around and explore departments and programs.

Must Reads

- Course syllabi (SJSU calls them "green sheets")
- *SJSU Schedule of Classes*
- *SJSU Catalog*

Engage

Check out what your fellow students are up to...

- The Spartan Daily*
- Update News
- KSJS 90.5 FM
- Access Magazine
- Recitals
- Plays
- Films
- Debates
- Art shows
- Athletic competition
- Intramural sports
- Student Government
- Tutoring

NO SOPHOMORE SLUMP

Sophomores year two

Sophomores

You've completed skills of general education (writing, math and communication), now you're getting involved in a four year values-based **GE program**. Every course has been reviewed to assure that you are engaged in active learning.

You're asked to demonstrate your mastery of certain value standards in the arts, letters, sciences, individual behavior, social issues, history, etc. As sophomores, you will **begin to take courses in the major** where you first meet key faculty with whom you will be working for the next several years.

If you haven't already done so, start exploring the **Career Center**. Need a part-time job? Want to see if you will qualify for an internship or co-op? This is the place to start.

Start planning if you want to **study overseas**. SJSU sponsors many opportunities for students to study in another country. What better way to increase your global understanding?

Participate

College is not a spectator sport.

- Stay healthy
- Use the fitness facilities
- Get enough sleep
- Seek help if you need it
- Balance your life

STAY FOCUSED

year three

Juniors

Juniors are involved heavily in **upper-division work in the major**, establishing **working relationships with faculty**, sometimes beginning to do work in the department such as assisting in labs, helping faculty do classroom work, and the like. Many students begin to coordinate their work, both on and off campus, with their major.

During the junior year, you will demonstrate your baccalaureate level **communication skills** through a common test and a discipline-based course that "fine tunes" your writing for your future career.

The big chill – at this point, you might feel as if you need a break. You can shake things up and still **stay focused** on your goals by:

- Overseas study
- Volunteer experience in our community
- Reorganizing your college year by taking summer classes
- Joining a campus club
- Attending at least one campus event during each term
- Taking a class just for fun
- Tutoring another student
- Becoming a campus tour guide
- Mentoring a middle school student

Spartan for life

The **Alumni Association** keeps you in touch with your friends, colleagues, faculty and staff.

College will transform your life. By supporting SJSU, you will **pay it forward** to the next generation of students.

Lifetime learning

You may return to SJSU to:
Enhance your workplace skills
Earn a specialized certificate
Take a short-term training program
Retrain for a new career
Take courses for fun or a change of pace

Something is happening nearly every day...

Guest lectures
Major authors series
Exhibits
Concerts
Conferences
Meetings
Department socials

THE SENIOR EXPERIENCE

year four

Seniors

Consider Graduate or professional school

Graduate school is for you if:

- Your goal is a teaching credential
- You are engaged in research that you want to take to another level
- You're on a career path that requires an advanced degree
- You love college and want to continue

When you reach senior status, you engage in a variety of "senior" experiences—capstone courses, integrating experiences, design projects, culminating performances or shows, senior theses or projects, internships or co-op placements and the like. These **senior experiences** are some of the most important SJSU hallmarks, and are a key reason why **employers often prefer SJSU graduates** to graduates of more visible and more prestigious institutions. SJSU students know how to do things, because they have hands-on experiences.

You will complete your **SJSU Studies**, where you will place the basic information of your lower division GE into integrated contexts. You will engage in issues involving social equality and inequality, in issues of global perspectives in culture and history, and in the integration of your science knowledge to applications to the environment.

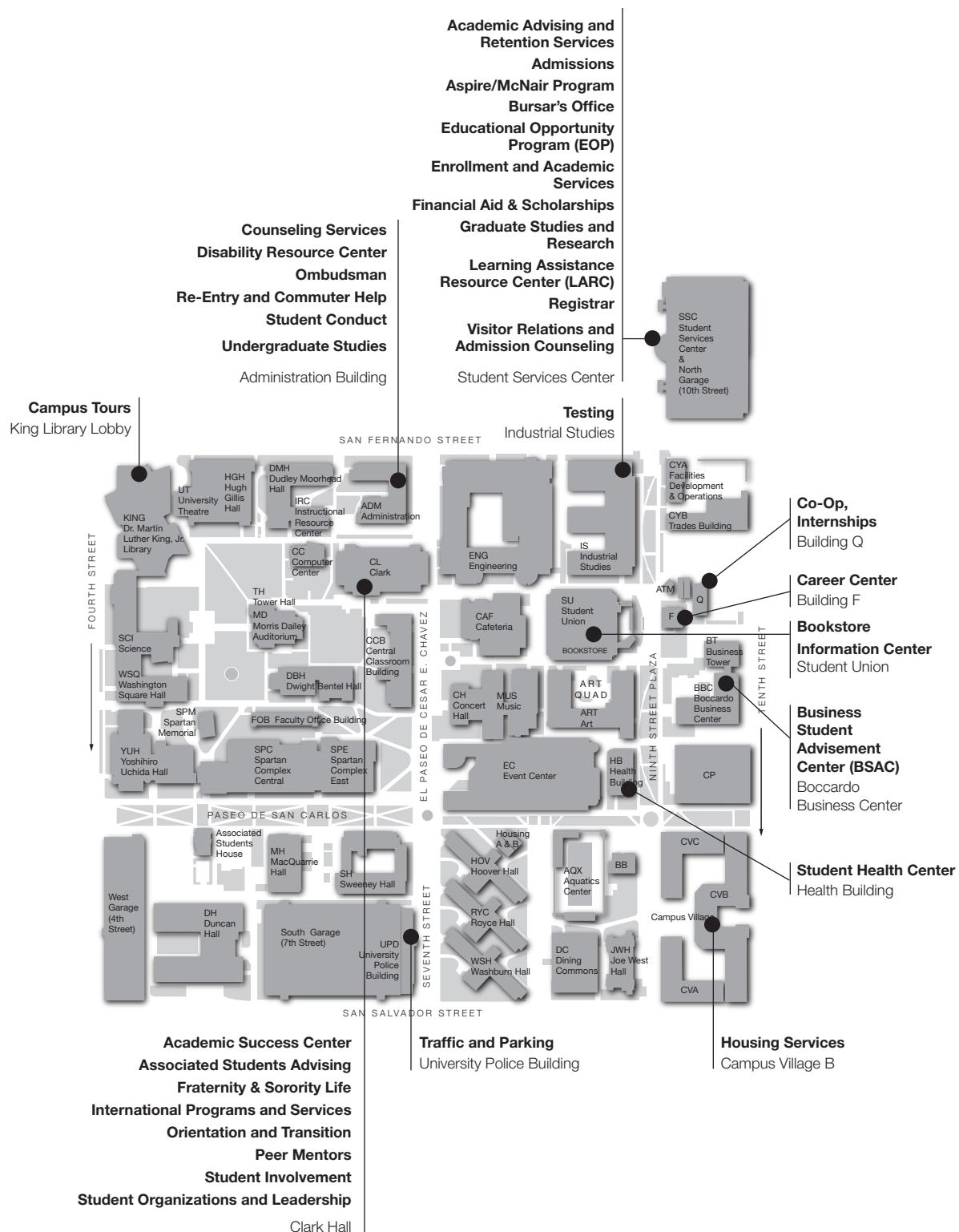
You may also undertake special **Departmental Honor's** courses and projects.

By now, **the Career Center is crucial to your future**. Writing a résumé, interviewing for jobs and meeting with industry representatives are acquired skills. Don't leave here without them.

Go to Commencement, even if you graduate mid-year. Invite your entire family (there's room!) and celebrate. If you're the first or the fourth generation to earn a baccalaureate, it's your achievement.

Congratulations, you did it!

Where do I start? For a complete campus map, see back cover



ADJACENT TO THE MAIN SJSU CAMPUS

Associated Students Child Care Center

460 S. 8th Street

International House

360 S. 11th Street

Directory

A

Academic Advising

Academic Advising ensures academic success and graduation in a timely manner. Undergraduates will have two types of academic advisors: a general education academic advisor and an advisor in the major department. Both types of academic advisors assist you with selecting courses and developing a plan for fulfilling SJSU requirements or choosing major requirements.

Where to go for advising:

DECLARED MAJORS

Major department

DECLARED MINORS

Minor department

UNDECLARED MAJORS

Academic Advising and Retention Services

Student Services Center
408-924-2129

SPECIAL MAJORS

Undergraduate Studies

Administration 159
408-924-2447

DOUBLE MAJORS

Major departments

INTERDISCIPLINARY GRADUATE MAJORS

Graduate Studies

Student Services Center
408-924-2480

SECOND BACHELOR'S

Major departments

GENERAL EDUCATION ACADEMIC ADVISING

- Academic planning
- Academic Advising for undeclared students
- General Education Academic Advising for all undergraduates
- Probation and disqualification advising for undeclared majors
- Assistance with interpreting Academic Advising Report (also known as Degree Audit)
- After the Late Registration period, process late drop petitions.
- Petition processing after Late Registration
- Note: Students are strongly encouraged to ensure the accuracy of their Advising Report/Degree Audit at least one year prior to graduation.

Academic Advising and Retention Services

Student Services Center
408-924-2129
www.sjsu.edu/aars

Admissions

Admissions Office

Student Services Center

ADMISSION STATUS – UNDERGRADUATES

408-924-5688
<http://my.sjsu.edu>

ADMISSION STATUS – GRADUATE

408-924-2480
<http://my.sjsu.edu>

APPLY TO SJSU

www.csumentor.edu

Admissions Counseling

- No appointments are needed. Students are seen on a first-come, first-serve basis
- All applicants: use access information sent to you by the Admissions office.
- Apply online at www.csumentor.edu for undergraduate and graduate admission.
- Receive information on admission requirements and information on majors offered at SJSU.
- Get help with questions about the undergraduate admission process or about your admission status.
- Drop-in for questions regarding Intra-system Visitor and Concurrent Enrollment.
- For campus tours, by appointment only, go to www.sjsu.edu/visit or call 408-924-2786.
- Pick up campus directions and self-guided tour map.
- Pick up forms for Step-to-College, SJSU's concurrent enrollment program for high school students.

Visitor Relations and Admission Counseling

outreach@sjsu.edu

408-924-2564

Alumni Association

408-924-6515

ASPIRE

- Provides eligible students with comprehensive academic support services designed to strengthen learning skills.
- Provides referral to qualified tutors in diverse subject areas, peer advising, workshops for improving study skills, and assistance in using the university's resources.

Student Services Center
408-924-2540

Associated Students

AS HOUSE

<http://as.sjsu.edu/>

BUSINESS OFFICE

The Associated Students General Services Center offers many services, including the following:

- Check cashing with valid student ID.
- If you do not have a checking account, bring in cash to purchase a money order that you can use like a check to pay your bills.
- Pay your Pacific Gas and Electric bills during regular business hours.
- Purchase medical, dental and optical insurance.
- Receive legal counseling.

SU 235

408-924-6200

CAMPUS RECREATION

Fitness, intramural, adventures and open recreation

AS House 106

408-924-6218

CHILD DEVELOPMENT CENTER

see Child Care

COMPUTER SERVICES

100 station computer lab with many services, including a laptop computer rental program.

SU 360

408-924-6976

GOVERNMENT OFFICE

AS House 200

408-924-6240

PRINT SHOP

The A. S. Print Shop is a self-supporting service of the Associated Students and provides students, faculty and staff a wide variety of printing and copying services.

Old Cafeteria

408-924-6291

SPECIAL EVENTS

Movie nights, Homecoming, Noontime Concerts, Blues Festival and more

AS House

408-924-6240

TRANSPORTATION SOLUTIONS

See Transportation

Athletics

INTERCOLLEGiate

408-924-1200

INTRAMURAL

408-924-6266

Directory

B

Bookstore

Student Union
408-924-1805
www.spartanshops.com

Bursar's Office

CASHIERING

- Collect payments owed to the university
- Cash, check and ATM debit card transactions
- After Late Registration, process late add petitions.

TOWER CARD

- Provide identification cards for students

COLLECTIONS

- Approve and disburse emergency loans
- Conduct entrance and exit interviews for first-time Perkins borrowers
- Provide financial counseling for campus debts
- Make payment arrangements for debts owed to the university

STUDENT ACCOUNTS

- Provide account information
- Manage third-party agreements with agencies and departments paying student fees
- Stop-payment on university-issued checks

Bursar's Office
Student Services Center
408-924-1601
bursar@sjsu.edu

Business Student Advisement Center (BSAC)

BBC 8
408-924-3435

C

Career Center

The Career Center is your one-stop resource for developing your career plans, choosing a major, connecting with employers, landing a job or internship and more.

Career Center services include:

- 24/7 access to Spartajobs, the exclusive job and internship bank for SJSU students, and SpartaSystem, your career management resource providing you with Career Employment E-news and "Hot Jobs"
- Job fairs and networking events with employers

- Resume, portfolio, internship and interview programs as well as many online resources
 - "What can I do with a major in...?" profiles
 - Career planning and job search advice
 - Career exploration software and directories
 - Graduate study resources
- Career Center services are available:
- Free to currently enrolled SJSU students
 - For a Career Center membership fee to alumni and community members

Career Center

Building F
408-924-6031
www.careercenter.sjsu.edu

Center for Distributed Education

www.online.sjsu.edu
ecampus@online.sjsu.edu

Child Care

Located close to campus, child care is available for children, aged 6 months to 6 years, of SJSU students.

- Hot lunch, breakfast and snack provided
- Flexible hours, part-time, full-time.
- Fees on a sliding scale.

Associated Students Child Development Center

460 S. Eighth Street
San José, CA 95112
408-924-6988

CMS Help Desk

MySJSU login and navigation assistance. To inquire about your MySJSU User ID or Password, include your first and last name, as well as your SJSU ID (if available), mailing address and date of birth.

cmshelp@sjsu.edu

Conflict and Common Ground

Conflict and Common Ground is a one-stop campus resource for managing conflict and change constructively through compassion, inquiry and dialogue. The services offered include:

Mediation – volunteer mediators help SJSU students in conflict with another student, non-student or a member of the university faculty or staff talk things through and reach a resolution to the dispute.

Mediation Center

Administration 218
408-924-5985
sparker@sjsu.edu
www.sjsu.edu/ccg

Corporate and International Development

408-924-2682
<http://cts.sjsu.edu>

Counseling Services

A professionally trained staff provides confidential and personal counseling services to enrolled SJSU students. Responding to the many pressures and demands facing students at different times, Counseling Services provides psychological and educational counseling, groups and workshops, crisis counseling, referral and consultation services, training of practicum and intern students, and a speakers bureau. There is no charge for currently enrolled students for any of these services.

Personal/Psychological Counseling

Counselors can work with you to improve your mood, decrease your anxiety, increase your skills in handling stress, improve your skills in relationships, and help you make better decisions. They offer confidential consultations with psychologists, social workers, and marriage family therapists. All services are free to enrolled SJSU students.

Educational Counseling

Do you need help adjusting to the university environment and academic expectations? Would you like to improve your study skills? Are you having trouble choosing a major? Are you showing a pattern of poor performance? There are many reasons why students come in for educational counseling. Educational counselors can problem-solve complex, sensitive issues that may be interfering with your ability to achieve academic success. The private offices in Counseling Services offer an atmosphere of safety and confidentiality between a counselor and a student. You will be provided with a limited number of individual sessions designed to help you become successful at SJSU. Educational Counselors also offer support, information and referral services to Re-Entry students (students returning to the university after a break in enrollment) as well as students in or thinking about the Over 60 program.

Outreach Service

A multicultural staff of professionally trained counselors offers a variety of presentations on topics of interest to campus organizations and student groups free of charge.

Counseling Services

Administration 201
408-924-5910
cs0035@email.sjsu.edu
<http://sa.sjsu.edu/counseling>

D**Disability Resource Center (DRC)**

The DRC facilitates the delivery and referral of academically related services for students with disabilities. Students who register and create a confidential file with the DRC can receive a wide spectrum of services based on individualized needs. It is recommended that students make an appointment to register with the DRC prior to registering for classes; however, students can register any time during the semester with the DRC. Services include, but are not limited to the following:

Adaptive Technology Center (ATC)

Students registered with the DRC receive one-on-one and small group training in the use of adaptive software and hardware.

Deaf and Hard of Hearing (D&HoH)

The D&HoH Program provides Educational Sign Language Interpreters or Real-Time Educational Captioners for students who are Deaf or Hard of Hearing. Eligibility for this service is determined by the Deaf Services Coordinator and/or Lead Interpreter, and is based in part on the professional documentation provided by the student.

Learning Disability Services

An array of academically related services is provided on a case-by-case basis for students with a verified learning disability. Accommodations include, but are not limited to, test accommodations and notetakers.

Disabled Parking Permits

Eligibility for disabled parking is determined on a case-by-case basis substantiated by medical verification.

Registration Priority

All students registering with the DRC will be considered for priority registration based on disability-related criteria and is determined on a case-by-case basis. It is recommended that students register with the DRC as soon as possible after applying to SJSU.

Test Accommodations

A range of test accommodations is available to students who qualify for this service. Accommodations include, but are not limited to extended time, scribe, and adaptive hardware/software.

Disability Resource Center

Administration 110
Voice: 408-924-6000
TTY: 408-924-5990
www.drc.sjsu.edu
info@drc.sjsu.edu

Disqualification & Reinstatement**Office of the Registrar**

Student Services Center
408-283-7500
www.sjsu.edu/registrar
erecords@sjsu.edu

Academic Advising

Intended major department

Counseling Services

Administration 201
408-924-5910
<http://sa.sjsu.edu/counseling>

E**eCampus**

Online classes offered at SJSU.
www.online.sjsu.edu
ecampus@online.sjsu.edu

Educational Opportunity Program (EOP)**ACADEMIC ASSISTANCE AND SUPPORT SERVICES****Student Advising Center (SAC)**

www.sjsu.edu/sac
Learning Assistance Resource Center (LARC)
www.sjsu.edu/larc

APPLY TO EOP

www.csumentor.edu

ADMISSION STATUS

408-283-7500
<http://my.sjsu.edu>

Emergency Information**DIAL 911 FROM ANY PHONE**

Any on-campus phone: 911
Any pay phone: 911

BLUE LIGHT PHONE

Just open box and pick up receiver

NON-EMERGENCY

On-campus office phones: 4-2222
Pay phone: 924-2222

MAJOR EMERGENCY INFORMATION

In the event of a major emergency
408-924-SJSU

Equal Opportunity, Office for

Harassment and discrimination complaints

UPD 303
408-924-1115

Evening Guides (Campus Police)

University Police Department
408-924-2222

F**Financial Aid and Scholarships**

Financial Aid and Scholarships awards federal, state and local grants, loans and scholarships. Start by filing the federal Free Application for Federal Student Aid (FAFSA). The **priority deadline is March 2 of every year**. You must apply every year to be considered for financial aid for the following academic year. By completing the process, we establish your financial need. Need is the difference between a typical student budget and what you and your family are expected to pay. Aid is awarded via:

Grants: Since grants generally do not have to be repaid, grants generally go to undergraduate students with the greatest need. SJSU distributes the Federal Pell Grants, Federal Supplemental Educational Opportunity Grants (SEOG); California Grants A, B and T; the State Graduate Fellowship, Educational Opportunity Program (EOP) and the State University Grants.

Loans: Loans can be helpful, but they must be repaid. If you must borrow, limit the amount to what you really need. It may seem nice now, but you will be repaying the funds, with interest, after you leave school. SJSU awards the following loan types: Federal Perkins Loan and the Kuhlman Loan, a loan program funded from the estate of a generous alumna. Also, loans are awarded through banks and other private lenders for the Federal Stafford subsidized and unsubsidized loans and Federal Plus Loans (for parents of college students).

Scholarships: To qualify for any SJSU scholarship, you must complete at least one semester at SJSU by March 2. Apply online at www.sjsu.edu/faso. The Scholarship Office has information to assist you with your scholarship search.

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

Financial Aid and Scholarships

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

Foreign Students

See International Students

Directory

Fraternity and Sorority Life

There are 35 social Greek letter organizations available to students at SJSU. Sororities and fraternities seek members who are interested in scholarship, social and athletic opportunities, community and campus service, and camaraderie and friendship.

Student Involvement

Clark Hall 140
408-924-5950
<http://getinvolved.sjsu.edu>
greeks@email.sjsu.edu

G

General Education Academic Advisement

The Student Advising Center is part of Academic Advising and Retention Services and provides general education academic advising to ensure your academic success and help you achieve your educational goals. To make the most of your advising sessions, please observe the following:

- You must be admitted to SJSU at the time you make an appointment.
- Bring a complete set of all college transcripts—unofficial copies are acceptable.
- Bring a copy of your General Education certification if you attended a California Community College. A partial certification is acceptable.
- Bring a copy of your Academic Advising Report (also known as degree audit)
- Learn the requirements for your major—see the SJSU Catalog listing for details.
- See your major advisor.

Note: Students who have not yet been admitted to SJSU should make an appointment for advising with Visitor Relations at 408-924-2564.

Student Advising Center

Student Services Center
www.sjsu.edu/aars
408-924-2129

Global Studies Initiative

www.gs.sjsu.edu
globalstudies@gs.sjsu.edu

Grades, Records, Transcripts

Though SJSU does not mail grades, they will be available with academic standing within 2-3 weeks after the end of the term. See Transcripts for information on official transcript requests.

Grades: Spring 1991 to the present

Access your grades via the Web
UserID and Password required
<http://my.sjsu.edu>

Graduate Studies and Research

Graduate Studies and Research handles graduate admissions from the application process through the review and acceptance process for new students. For continuing students, we evaluate "candidacy" and "application for award of the degree" requests. Our office also provides guidance to faculty and students on the graduate writing requirement, human subjects research, theses, and CSU sponsored funding opportunities. Faculty materials and guidance are available for a number of functions, including curriculum changes, new degree programs, organized research units, research opportunities, and graduate advising.

ADMISSION STATUS

<http://my.sjsu.edu>

APPLY TO SJSU

www.csumentor.edu

Graduate Studies and Research

Student Services Center
408-924-2480
www.sjsu.edu/gradstudies

H

Health Services

The **Student Health Center** provides quality, convenient, affordable medical care and health promotion to any registered SJSU student. Most costs are already covered by your registration fees.

Primary Care

(no charge to enrolled students)

- Physicians and nurse practitioners are available to treat medical conditions, illness or injuries.
- Women's health: Evaluation and treatment of gynecological problems, annual examinations, Pap smears (lab fee) and contraception counseling.
- Sports Medicine: Supplies, if needed, at cost.
- Preventative Medicine: Health educators and a nutritionist provide individual counseling and group presentations.
- Sexually transmitted disease checks, AIDS/HIV information and confidential testing.
- Immunizations – measles, mumps, & rubella
- Immunizations – tetanus, hepatitis, meningitis, influenza (at cost)

Specialty Care (fee-for-service)

- Allergy (injections only)
- Dermatology
- Podiatry
- Psychiatry (no fee)
- Travel Medicine

Ancillary Services (by referral)

- Laboratory: Laboratory procedures and diagnostic tests are done in-house at no charge, or sent to a reference laboratory and charged at cost.
- Pharmacy: SHC Prescriptions filled. Non-prescription products (OTC's) are available (including condoms), both at cost.
- Physical Therapy: per visit fee charged.
- X-ray: Non-invasive procedures are done in-house, usually at no charge.

Other Services (fee-for-service)

- Elective physical examinations: Academic (Nursing, Occupational Therapy, etc.), athletic, pre-employment, routine, SCUBA, travel abroad, DMV.
- CPR and First Aid classes
- Condom Co-Op (contraceptive sales)

The Student Health Center is accredited by the AAAHC, a national organization that reviews medical facilities to ensure community and professional standards are met.

Student Health Center

Health Building 106
(Corner of South Ninth Street and Paseo de San Carlos)
408-924-6120
http://sa.sjsu.edu/student_health/

Appointments

408-924-6122

Housing

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

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

University Housing Services

408-795-5600
www.housing.sjsu.edu
info@housing.sjsu.edu

International House

The SJSU International House is a comfortable home to 70 SJSU students representing approximately 35 countries, including the U.S. The I-House staff promotes cross-cultural learning and communication, encouraging active participation in a wide variety of programs and activities. Outstanding facilities include a computer lab and study room, formal and informal living and dining rooms, a student kitchen, grand piano, wireless Internet access, sports equipment and games.

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

ID – SJSU ID

An SJSU ID is assigned to all students. To protect your privacy, this SJSU ID replaces the use of Social Security Number for most SJSU transactions. This number cannot be changed. Use it to access registration and grades on the phone, as well as other functions and forms as identified.

- New students receive this information via admission office communications.

Information Center

Student Union
408-924-6350

International and Extended Studies

International and Extended Studies offers several programs that allow students to earn degree units from SJSU or to take noncredit or Continuing Education Unit programs. Take classes on campus or online – without formal admission – to take a class or two, for reinstatement to SJSU or another university, or to enroll after the regular application deadline has passed.

International and Extended Studies
210 North Fourth Street, Suite 301
San José, CA 95112
408-924-2670
[www.ies.sjsu.edu](http://ies.sjsu.edu)
info@ies.sjsu.edu

International Outreach and Leadership Programs

408-924-2627
<http://ies.sjsu.edu/ilp>

Jnternational Programs and Services

INTERNATIONAL STUDENT AND SCHOLAR SERVICES

Clark 543
408-924-5920
www.sjsu.edu/depts/ipss/
sjsuips@sjsu.edu

STUDY ABROAD PROGRAMS AND EXCHANGES

Clark 543
408-924-5931
www.sjsu.edu/depts/studyabroad/

SJSU INTERNATIONAL HOUSE

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

International Students

General admission information sessions are held in the Student Services Center. However, evaluation of student records is done via the admission application process.

UNDERGRADUATE INTERNATIONAL ADMISSIONS

Student Services Center
408-924-2564

GRADUATE INTERNATIONAL ADMISSIONS

Student Services Center
408-924-2480

INTERNATIONAL PROGRAMS AND SERVICES

For international students and students wishing to study abroad
www.sjsu.edu/depts/ipss
408-924-5920

HOUSING

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

UNIVERSITY HOUSING SERVICES

Campus Village, Building B,
2nd Floor
408-795-5600
<http://housing.sjsu.edu>
info@housing.sjsu.edu

Jobs and Internships

Check out SpartaJOBS, a bank of part-time (on and off-campus), internship, summer/seasonal and full-time professional positions exclusively for SJSU students and graduates.

Career Center (SpartaJOBS)

Building F
408-924-6031

K

KSJS 90.5 FM

Campus Radio Station
408-924-KSJS

L

Learning Assistance Resource Center (LARC)

The Learning Assistance Resource Center offers a range of services to assist students in developing their full academic potential. Skills are developed through individual or group tutorials and workshops. All services at the center are available free of charge to registered SJSU students. LARC offerings include:

- Tutoring in many introductory and intermediate courses taught at the university
- Assistance in building writing skills by improving basic grammar usage and sentence structure, as well as organizing and developing essays and term papers
- Assistance with lower and upper division mathematics, for example: algebra, calculus, differential equations and others
- Skills improvement workshops to aid students in many useful areas, such as studying effectively, managing money, selecting a major, etc.
- Group study/adjunct classes in specific courses
- CBEST and WST test preparation
- Support in basic computer skills
- Appointments or drop-in services

Learning Assistance Resource Center (LARC)

Student Services Center, 600
408-924-2587
www.sjsu.edu/larc

Library

The Martin Luther King, Jr. Library provides informational, reference and instructional services to all students, staff and faculty. Over 1.5 million materials are housed in the King Library, including books, magazines, government publications, maps and an array of electronic resources.

- Study areas for individuals and groups are located on the upper floors of the library.

King Library

408-808-2000
www.sjlibrary.org

Directory

M

McNair Scholars Program

Ronald E. McNair Post-Baccalaureate Achievement programs are designed to encourage low-income students and minority undergraduates to consider careers in college teaching as well as prepare for doctoral study. Students who participate in this program are provided with research opportunities and faculty mentors.

Student Services Center
408-924-2540

Mediation Center

The Mediation Center provides dispute resolution services for SJSU students experiencing a conflict with another student, friend, family member, roommate, classmate, significant other, landlord, or a member of the university faculty or staff.

Mediation Center
Administration 242
408-924-1098
acosta@sjsu.edu
www.sjsu.edu/ccg

MOSAIC Cross Cultural Center

Since a cross cultural perspective is essential for all of us, the center encourages students, faculty and staff to participate in a wide range of activities, including multicultural programming; calendar of events; advising for student organizations; workshops and training; leadership development, and a small resource library.

MOSAIC
Student Union, 3rd Floor
408-924-6255
<http://sa.sjsu.edu/mosaic>

MySJSU

- All applicants: use access information sent to you by the Admissions office and log in to check your status and view messages.
- View your enrollment appointment start date and time for registration.
- Register for classes.
- Search for open sections of classes.
- Print your own class schedule.
- Print any grades from Spring 1991 to the present.

<http://my.sjsu.edu>

O

Ombudsman

The University Ombudsman is an impartial party appointed to receive complaints, provide information, facilitate communication, and offer conflict resolution between students and members of the university community (faculty, staff, and administrators).

University Ombudsman
Administration 218
408-924-5985
<http://sa.sjsu.edu/ombudsman>

Open University

Open University is *not* available to matriculated students.

Open University allows students to earn degree units from SJSU or to take noncredit or Continuing Education Unit programs.

Information booklets, including registration information, are available on campus at the Spartan Bookstore, Student Services Center, Counseling Services and off campus at International and Extended Studies.

Fall schedule available online in July.

Spring schedule available online in December.

Summer schedule available online in May.

International and Extended Studies
210 North Fourth Street, Suite 301
San José, CA 95112
408-924-2670
www.ou.sjsu.edu
info@ies.sjsu.edu

Orientation and Transition

Three programs facilitate a successful orientation and transition to SJSU for both students and parents. Orientation is an important first step to aid freshmen and their families to learn to navigate SJSU, register for classes, and make the connections needed to be successful. Fall Welcome Days help new students get a successful start to the fall semester by providing programming such as the Welcome Convocation. First Year Programs continue to aid transition for students and families during the spring semester.

Student Involvement
Clark Hall 140
408-924-5972
www.sjsu.edu/orientation
orientation@sjsu.edu

Osher Lifelong Learning

408-924-2735
www.osher.sjsu.edu
info@osher.sjsu.edu

Over 60 Program

The Over 60 Taxpayer's Benefit Program allows enrollment of persons 60 years of age or older without payment of the admission application fee and most registration fees. Over 60 participants must still be eligible to be a matriculated student at SJSU. Apply online at www.csumentor.edu.

Students admitted to the program begin registration on the first day of classes must complete their registration by the drop deadline.

ADMISSION QUESTIONS

Visitor Relations and Admission Counseling
Student Services Center
408-924-1564
www.sjsu.edu/visit
outreach@sjsu.edu

ADVISING QUESTIONS

Educational Counseling
Counseling Services
408-924-5910
www.sa.sjsu.edu/counseling
cs0035@email.sjsu.edu

P

Parking Permits

BURSAR'S OFFICE
Student Services Center
408-924-1601
bursar@sjsu.edu

PARKING SERVICES
UPD Building
408-924-6556
parking@sjsu.edu

Peer Mentor Center

Academic Success Center
Clark Hall
408-924-2198
www.sjsu.edu/muse/

Police (Campus)

University Police Department
408-924-2222

Pre-College Programs

- College Readiness
- Upward Bound

Student Services Center
408-924-2567

Preprofessional Advising

PRE-ARTS ADMINISTRATION

Art Department
Creative Arts Department
Television, Radio, Film and Theatre
Arts Department

PRE-DENTAL

Biological Sciences Department
Chemistry Department

PRE-PROFESSIONAL EDUCATION

College of Education

PRE-LAW

Administration of Justice
Business Management Department
Communication Studies
Political Science
Student Advising Center – Academic Services

PRE-MEDICINE

Biological Sciences Department
Chemistry Department

PRE-OPTOMETRY

Biological Sciences Department
College of Applied Sciences and Arts

PRE-PHARMACY

Biological Sciences Department
Chemistry Department

PRE-PHYSICAL THERAPY

Biological Sciences Department
Human Performance Department
Occupational Therapy Department

PRE-SOCIAL WORK

School of Social Work

TEACHER PREPARATION

Elementary Education
Secondary Education
Science Education

PRE-THEOLOGY

Comparative Religious Studies
Department

PRE-VETERINARY MEDICINE

Biological Sciences Department

Probation Advising

DECLARED MAJORS

Major departments
Counseling Services
408-924-5910
<http://sa.sjsu.edu/counseling>

UNDECLARED MAJORS AND EOP STUDENTS

**Student Advising and Retention
Services**
Student Services Center
408-924-2129
www.sjsu.edu/aars

R

Recreation (Campus)

Campus Recreation, sponsored by Associated Students and a member of Spartan Rec Connect, include activities such as swimming, bowling, weight lifting, drop-in recreation, pick-up games, league sports, club sports, cardio and group fitness, trips and equipment rentals. In addition, Campus Recreation provides team/individual sports and tournaments, wellness classes, custom activities for student organizations and residence hall students as well as open recreation in SPX A and B Gyms.

Campus Recreation

BB 200
408-924-6218
www.sjsu.edu/spartanrec

Registrar's Services

For up to date information about registration, see www.sjsu.edu/registrar. Services include:

- Register for Open University and Special Session courses during Late Registration.
- Verify your SJSU enrollment or degree or guide you through the online process at the National Student Clearinghouse.
- Process petitions for excess units, leave of absence, academic renewal, incomplete extension, and residency re-evaluation.
- Answer questions and resolve matters regarding registration.
- Process requests for official transcripts
- Veteran's educational benefits
- Step to College program

Office of the Registrar
Student Services Center
408-283-7500
www.sjsu.edu/registrar
erecords@sjsu.edu

S

Safety Report

To meet federal requirements, SJSU posts campus safety reports.

University Police

www.sjsu.edu/safetyreport
408-924-2172

Service Learning

Enroll in a service learning class where you will apply classroom theory to real community issues, explore career options, develop personal and professional skills, and develop a greater awareness of your role in the world.

Center for Service Learning

Administration
408-924-3540
<http://csl.cob.sjsu.edu>

Special Session

Take courses in alternative locations or formats. Earn degree credit units. Program details are online each term.

International and Extended Studies

210 North Fourth Street, Suite 301
408-924-2670
www.specialsession.sjsu.edu
info@ies.sjsu.edu

Step-to-College

SJSU sponsors a low-cost concurrent enrollment program for area high school students through the Step-to-College program.

Office of the Registrar
Student Services Center
408-283-7500
www.sjsu.edu/registrar
erecords@sjsu.edu

Student Advising Services

See Advising

Student Conduct & Ethical Development

This office enforces the SJSU Student Conduct Code and Student Organization Code of conduct. Student development is paired with the appropriate disciplinary sanctions to help students facilitate their educational and ethical growth.

Administration 218
408-924-5985
http://sa.sjsu.edu/student_conduct

Directory

Student Involvement

Student Involvement engages students in learning and personal development by fostering connections within SJSU's diverse university community, promoting campus citizenship and preparing students for current and future leadership roles. Program areas include Associated Students Advising, Fraternity and Sorority Life, Orientation and Transition, and Student Organizations and Leadership.

Student Involvement

Clark Hall 140
408-924-5950
<http://getinvolved.sjsu.edu>
getinvolved@sjsu.edu

Student Organizations and Leadership

Students may choose from more than 250 student organizations. Joining a student group is a great way to meet others to pursue common social, educational, spiritual, recreational, and cultural interests. You might even wish to start your own student organization. A current "Involvement Guide", including web links and contact information is available at Student Involvement and on the web.

Student Involvement
Clark Hall 140
408-924-5950
<http://getinvolved.sjsu.edu>
getinvolved@sjsu.edu

Student Services Center

The Student Services Center, located at Ninth and E. San Fernando streets, brings together Admissions, Academic Advising and Retention Services, the Bursar's Office, Campus Tours, the Educational Opportunity Program, Enrollment Services, Financial Aid and Scholarships, Graduate Studies and Research, Registrar's Office, and Visitor Relations.

If you need any physical accommodation to access our services, please inform one of the staff members for assistance.

Student Services Center
408-283-7500

Student Success Services

Providing academic support to student-athletes, including NCAA advising and learning support, Student Success Services is located on South Campus.

Gadway Academic Center
Simpkins Stadium Center
408-924-1252
www.SJSUspartans.com > Inside Athletics > Academic Services

Student Union, Inc.

As the center of student life at SJSU, the Student Union includes:

BOWLING CENTER

With 14 lanes, table tennis, billiards, foosball and arcade games.
408-924-6400

INFORMATION CENTER

A comprehensive community and campus information and referral center. 408-924-6350

The Event Services Office, which schedules meetings, events and non-academic activities on campus.
408-924-6300

MUSIC ROOM

Houses more than 1,800 CDs and records with private listening booths and a general study area.

Student Union, Upper Level
408-924-6350
www.union.sjsu.edu

AQUATIC CENTER

One of the largest outdoor swimming pools in California, the Aquatic Center is heated year-round. Please see the Aquatic Center section for more details.

Aquatic Center
408-924-6341

EVENT CENTER ARENA

The Arena hosts concerts, athletic events, corporate conferences and cultural affairs.

Event Center Arena

Administration: 408-924-6360
Box Office: 408-924-6333

SPORT CLUB

Come for a quality workout at the university's full-fledged gym. See the Sport Club section for more details.

Sport Club
Event Center
408-924-6368

Studies in American Language

SAL is an intensive English language program for international students who want to improve their English skills in order to attend an American college or university. SAL also provides English language skills training for those who want personal or professional training.

Studies in American Language
IS 227
408-924-2660
www.sal.sjsu.edu
sal@salmail.sjsu.edu

Study Abroad

Opportunities exist for study outside the U.S. in more than 40 countries worldwide. There are programs through the CSU system, SJSU bilateral exchanges, SJSU's Semester in Bath, England and the International Student Exchange Program. Students receive resident credit and continue making progress towards their degree. Participants generally pay their normal tuition and fees and may use their financial aid while on SJSU-certified programs. Students may also apply for scholarships specifically for study abroad programs.

Study Abroad

Clark Hall 543
408-924-5931
www.sjsu.edu/depts/studyabroad/
study.abroad@sjsu.edu

Summer Term

FOR MATRICULATED SJSU STUDENTS

<http://info.sjsu.edu>
Schedule available in April

FOR NON-MATRICULATED STUDENTS

See Open University
Schedule available in May



Testing Office

Information on ELM, EPT, WST; graduate examinations (GRE, LSAT, MCAT, etc.), including registration materials.

Services include but are not limited to make-up tests; proctored examinations; Career Planning Tests—Strong Interest Inventory, Meyers Briggs Type Indicator, Campbell Interest Skills and Survey; as well as Social Sciences Challenge Examinations (Critical Thinking, American Institutions).

Testing Office

Industrial Studies 228
408-924-5980
<https://testing.sjsu.edu>

Tours

Visitor Relations and Admission Counseling

Welcome Center - King Library
www.sjsu.edu/visit
408-924-2786

Tower Card

Bursar's Office
Student Services Center
408-924-1601

Transcripts

Whether you are graduating and need to send your grades to a graduate school, applying for a scholarship, or starting a job, your transcripts are the official record of your grades at SJSU. The process takes some time, so be sure to turn in your request in advance.

How to request an official transcript

The request for an official SJSU transcript must be submitted by mail, fax, or in person at the Student Services Center counter. Phone or email requests cannot be accepted. Form is available at www.sjsu.edu/registrar or if writing a letter, include the following information:

- Full name
- All previous name(s)
- SJSU ID or Social Security Number
- Date of birth
- Dates of attendance at SJSU
- Daytime phone number
- Indicate when to send (e.g., now, after grades or degree posts)

Costs

No charge for official transcripts. However, written signed requests are required for processing.

Fax the request to 408-924-2077 (Attn. Registrar's Office) or send the signed request to:

San José State University
Office of the Registrar
One Washington Square
San José, CA 95192-0009

The transcript(s) will be sent within seven to ten working days after receipt of the request. End of term requests may take longer, contingent on grade or degree posting.

Transfer Advising

Student Services Center

Transportation Alternatives

Looking for alternatives to driving alone and trying to find parking? There is an option: Free bus and light rail access, automated carpool, bicycle enclosures, trip planning and more.

Associated Students
Transportation Solutions Program
SU 235
408-924-RIDE

Tutoring Services

ASPIRE

Student Services Center
408-924-2540

ENGINEERING

Tutorial assistance is provided through the department offices and student clubs by both undergraduate and graduate Engineering students. The department will attempt to help students locate tutors.

LEARNING ASSISTANCE RESOURCE CENTER (LARC)

The Learning Assistance Resource Center offers a range of services to assist students in developing their full academic potential. Skills are developed through individual or group tutorials and workshops. All services at the center are available free of charge to registered SJSU students.

LARC offerings include:

- Tutoring in many introductory and intermediate courses taught at the university
 - Assistance in building writing skills by improving basic grammar usage and sentence structure, as well as organizing and developing essays and term papers
 - Assistance with lower and upper division mathematics, for example: algebra, calculus, differential equations and others
 - Skills improvement workshops to aid students in many useful areas, such as studying effectively, managing money, selecting a major, etc.
 - Group study/adjunct classes in specific courses
 - CBEST and WST test preparation
 - Support in basic computer skills
 - Appointments or drop-in services
- Student Services Center, 600
408-924-2587
www.sjsu.edu/larc

MATHEMATICS

Student must enroll in Math 110L to use the computer laboratory.

Mathematics Laboratory

MH 221
408-924-5100

WRITING CENTER

The Writing Center is an instructional resource for all students of all disciplines and writing abilities. We offer tutoring and workshops tailored to the needs of individuals and groups, and will assist faculty in any way requested.

Writing Center

Clark Hall 126
408-924-2308
www.sjsu.edu/writingcenter

U

Undergraduate Studies

Administration 159
408-924-2447

V

Veterans Educational Benefits

Registrar's Office
Student Services Center
408-924-2015
www.sjsu.edu/registrar/veterans

W

Winter Session

Earn 3 units in 3 weeks in January, whether you already attend SJSU or not. Earn degree credit units. Course details are online.

24-HOUR SCHEDULE REQUEST

408-924-2630
Schedule available in October

International and Extended Studies

210 North Fourth Street, Suite 301
San José, CA 95112
408-924-2670
www.winter.sjsu.edu
info@ies.sjsu.edu

Withdrawals

Academic Advising and Retention Services
Student Services Center
408-924-2129

Counseling Services
ADM 201
408-924-5910
<http://sa.sjsu.edu/counseling>

World Wide Web

<http://www.sjsu.edu>
<http://my.sjsu.edu>
<http://info.sjsu.edu>

Calendar Overview – Fall 2008 – Spring 2010

All dates subject to change without notice. For detailed information, see the online Schedule of Classes

Fall 2008

August 2008

Thursday, August 21

Academic year begins

Thursday, August 21 – Friday, August 22

Pre-instruction activities

Monday, August 25

First day of instruction

September 2008

Monday, September 1

Labor Day – campus closed

Friday, September 5

Last day to drop or withdraw without an entry on the student's permanent record

Friday, September 12

Last day to add courses and register late

Monday, September 22

Enrollment Census date

November 2008

Tuesday, November 11

Veteran's Day – Campus closed

Wednesday, November 26

Classes that start at 5:00 pm or later will not meet

Thursday, November 27 –

Friday, November 28

Thanksgiving Holiday – Campus closed

December 2008

Wednesday, December 10

Last day of instruction

Thursday, December 11

Study/Conference Day – no classes or exams

Friday, December 12 & Monday, December 15 –

Thursday, December 18

Final examinations

Friday, December 19

Final examinations make-up day

Monday, December 22

Grade evaluation day

Tuesday, December 23

Grades due from faculty

Wednesday, December 24, 2008 – Monday, January 20, 2009

Winter Recess

Spring 2009

January 2009

Monday, January 19

Martin Luther King, Jr. Day – Campus closed

Wednesday, January 21

Spring semester begins

Pre-instruction activities

Thursday, January 22

First day of instruction

February 2009

Tuesday, February 3

Last day to drop or withdraw without an entry on the student's permanent record

Tuesday, February 10

Last day to add courses and register late

Wednesday, February 18

Enrollment Census date

March 2009

Thursday, March 2

Priority filing deadline for 2007-08 financial aid and scholarships

Monday, March 23 –

Friday, March 27

Spring Recess (no classes) – Campus services open

Tuesday, March 31

Cesar Chavez Day – Campus Closed

May 2009

Wednesday, May 13

Last day of instruction

Thursday, May 14

Study/Conference Day – no classes or exams

Friday, May 15 & Monday, May 18 –

Thursday, May 21

Final examinations

Friday, May 22

Final examinations make-up day

Saturday, May 23

Commencement

Monday, May 25

Memorial Day – Campus closed

Tuesday, May 26

Grade evaluation day

Wednesday, May 27

Grades due from faculty – end of academic year

Winter 2009

January

Monday, January 5 –

Friday, January 16, 2009

Winter Session

Summer 2009

June – August

Dates to be determined.

See the online SJSU Schedule of Classes.

Fall 2009**August 2009****Thursday, August 20**

Academic year begins

Thursday, August 20 –**Friday, August 21**

Pre-instruction activities

Monday, August 24

First day of instruction

September 2009**Thursday, September 3**

Last day to drop or withdraw without an entry on the student's permanent record

Monday, September 7

Labor Day – campus closed

Friday, September 11

Last day to add courses and register late

Monday, September 21

Enrollment Census date

November 2009**Wednesday, November 11**

Veteran's Day – campus closed

Wednesday, November 25

Classes that start at 5:00 pm or later will not meet

Thursday, November 26 -**Friday, November 27**

Thanksgiving Holiday – Campus closed

December 2009**Tuesday, December 8**

Last day of instruction

Wednesday, December 9

Study/Conference Day – no classes or exams

Thursday, December 10 –**Friday, December 11 and****Monday, December 14 –****Wednesday, December 16**

Final Examinations

Thursday, December 17

Final examinations make-up day

Friday, December 18

Grade evaluation day

Monday, December 21

Grades due from faculty

December 22, 2009 –**January 24, 2010**

Winter Recess

Spring 2010**January 2010****Monday, January 18**

Martin Luther King, Jr. Day – Campus closed

Monday, January 25

Spring semester begins

Pre-instruction activities

Tuesday, January 26

First day of instruction

February 2010**Friday, February 5**

Last day to drop or withdraw without an entry on the student's permanent record

Friday, February 12

Last day to add courses and register late

Monday, February 22

Enrollment Census date

March 2010**Thursday, March 2**

Priority filing deadline for 2008-09 financial aid and scholarships

Monday, March 29 – Friday, April 2

Spring Recess (no classes)

Campus services open, except on Wednesday, March 31

Wednesday, March 31

Cesar Chavez Day – Campus Closed

May 2010**Monday, May 17**

Last day of instruction

Tuesday, May 18

Study/Conference Day – no classes or exams

Wednesday, May 19 –**Friday, May 21 &****Monday, May 24 – Tuesday, May 25**

Final examinations

Wednesday, May 26

Final examinations make-up day

Thursday, May 27

Grade evaluation day

Friday, May 28

Grades due from faculty – end of academic year

Saturday, May 29

Commencement

Monday, May 31

Memorial Day – Campus closed

Winter 2010**January****Monday January 4 –****Friday, January 22, 2010**

Winter Session

Summer 2010**June – August****Dates to be determined.**

See the online SJSU Schedule of Classes.

International Programs

Developing intercultural communication skills and international understanding among its students is a vital mission of The California State University (CSU). Since its inception in 1963, the CSU International Programs has contributed to this effort by providing qualified students an affordable opportunity to continue their studies abroad for a full academic year. More than 15,000 CSU students have taken advantage of this unique study option.

Participants earn resident academic credit at their CSU campuses while they pursue full-time study at a host university or special study center abroad. The International Programs serves the needs of students in more than 100 designated academic majors. Affiliated with more than 70 recognized universities and institutions of higher education in 20 countries, the International Programs also offers a wide selection of study locales and learning environments.

International Programs pays all tuition and administrative costs for participating California resident students to a similar extent that such funds would be expended to support similar costs in California. Participants are responsible for all personal costs, such as transportation, room and board, living expenses, and home campus fees. Financial aid, with the exception of Federal Work-Study, is available to qualified students.

To qualify for admission to the International Programs, students must have upper division or graduate standing at a CSU campus by the time of departure. Students at the sophomore level may, however, participate in the intensive language acquisition programs in France, Germany, and Mexico. California Community Colleges transfer students are eligible to apply directly from their community colleges. Students must also possess a current cumulative grade point average of 2.75 or 3.0, depending on the program for which they apply. Some programs also have language study and/or other coursework prerequisites.

Participating Countries

Australia

- Griffith University
- Macquarie University
- Queensland University of Technology
- University of Queensland
- University of Western Sydney
- Victoria University

Canada

The universities of the Province of Quebec, including

- Bishop's University
- Concordia University
- McGill University
- Université Laval
- Université de Montréal
- Université du Québec system

Chile

- Pontificia Universidad Católica de Chile (Santiago)

China

- Peking University (Beijing)

Denmark

- Denmark's International Study Program (the international education affiliate of the University of Copenhagen)

France

- Institut des Etudes Françaises pour Étudiants Étrangers, L'Académie d'Aix-Marseille (Aix-en-Provence)
- Universités de Paris III, IV, V, VI, VII, VIII, IX, X, XI, XII, XIII, the Institute of Oriental Languages and Civilizations, and Université Evry.

Germany

- Universität Tübingen and a number of institutions of higher education in the Federal state of Baden-Württemberg

Ghana

- University of Ghana (Legon)

Israel

- Tel Aviv University
- The Hebrew University of Jerusalem
- University of Haifa

Italy

- CSU Study Center (Florence)
- Università degli Studi di Firenze
- La Accademia di Belle Arti Firenze

Japan

- Waseda University (Tokyo)
- Korea
- Yonsei University (Seoul)

Mexico

- Instituto Tecnológico y de Estudios Superiores de Monterrey, Campus Querétaro

New Zealand

- Lincoln University (Christchurch)
- Massey University (Palmerston North)

South Africa

- University of Kwazulu-Natal
- Nelson Mandela Metropolitan University

Spain

- Universidad Complutense de Madrid
- Universidad de Granada

Sweden

- Uppsala University
- Taiwan
- National Taiwan University (Taipei)
- National Tsing Hua University

United Kingdom

- Bradford University
- Bristol University
- Hull University
- Kingston University
- Sheffield University
- University of Wales Swansea

Zimbabwe

- University of Zimbabwe (Harare)

SJSU Bilateral Exchange Programs

Reciprocal exchanges with partner institutions for an academic year or semester are available with:

Argentina

- Universidad de Ciencias Empresariales y Sociales (Buenas Aires)

Australia

- Queensland University of Technology (Brisbane)
- Curtin University (Perth)

Brazil

- Federal University of Itajubá (Minas Gerais)
- Foundation for Analysis, Research and Technology of Manaus (Amazonas)
- National Institute of Telecommunications of Santa Rita do Sapucaí (Minas Gerais)

China (Hong Kong)

- City University Hong Kong

France

- Ecole Nationale Supérieure de Création Industrielle, Les Ateliers (Paris)
- l' Institut d'Etudes Politiques de Lille
- Universities of Paris consortium (MICEFA)

India

- Indian Institute of Management Bangalore

Ireland

- University College Dublin

Japan

- Okayama University
- Yokohama National University

Spain

- University of Burgos

Switzerland

- Zurich University of Applied Sciences (Winterthur)

Thailand

- Chulalongkorn University (Bangkok)

United Kingdom

- Nottingham Business School
- Roehampton University (London)
- University of Hertfordshire (Hatfield)

International Student Exchange Programs (ISEP)

SJSU is a member of this consortium that offers more options in 35 countries for an academic year, semester or summer.

Spring Semester in Bath, England

SJSU faculty and students travel to Bath, England during the spring semester, where they complete a program of study that includes SJSU Studies (GE) courses, field trips, living with a British family and opportunities for internships in most academic fields.

Faculty-Led Programs (FLP)

SJSU Faculty lead 3-6 week programs to another country during summer or winter sessions.

408-924-6128
www.flp.sjsu.edu

For applications or more information

SJSU Study Abroad Office

International Programs and Services (IPS)
Clark Hall 543
408-924-5931
study.abroad@sjsu.edu
www.sjsu.edu/studyabroad/

For information about specific CSU programs

CSU International Programs

401 Golden Shore, Sixth Floor
Long Beach, CA 90802-4210
www.gateway.calstate.edu/
csuinternet

College of Applied Sciences and Arts

Dean's Office

MacQuarrie Hall 433
408-924-2900

www.sjsu.edu/casa/

Aerospace Studies

Air Force ROTC

Health Professions

Health Science

Hospitality, Recreation, and Tourism Management

Journalism and Mass Communications

Justice Studies

Kinesiology

Library and Information Science

Military Science (Army ROTC)

Nursing

Nutrition, Food Science, and Packaging

Occupational Therapy

Social Work

The College of Applied Sciences and Arts provides both liberal and well-defined professional education at the undergraduate and graduate levels. Course work prepares students to be competent professionals in a technologically complex and culturally diverse society. The college's courses and programs provide students with a theoretical base developed and tested through research, knowledge that can be applied in diverse systems, processes that incorporate human understanding and cooperation, and supervised practice through internships, field work and/or preceptorships in a variety of career-related settings. Graduates become leaders and establish professional careers as administrators, educators, practitioners and applied researchers in a variety of settings. These settings include both private and public agencies, government institutions at all levels, community and health care organizations and educational institutions.

Internships

The departments and schools within the College offer internships that involve advanced practical experience, fieldwork or clinical experience in a professional work setting under direct supervision of qualified professionals. Interns would be assigned various duties and experiences related to their particular areas of specialization. Internships may include seminars, practica or preceptorships to further develop beginning and advanced level practice skills

College of Business

Dean's Office

Business Tower 950
408-924-3400
www.cob.sjsu.edu

Accounting and Finance

Management Information Systems
Marketing
Organization and Management

The College of Business is the institution of opportunity, providing innovative business education and applied research for the San José region since 1928.

The College offers an accessible, high value education that empowers people of all ages and backgrounds to transform their lives. Faculty and staff are strongly committed to the College's mission; maintain a collegial, inclusive teaching and learning environment; and are dedicated to continuous improvement in all areas of academic achievement, scholarship, teaching and service.

The college is an active member of the San José and Silicon Valley community and provides a talent pool, thought leadership and service that supports the region's growth in the global marketplace. The college is one of the 500 institutions worldwide that are accredited by the prestigious AACSB International, the Association to Advance Collegiate Schools of Business. In addition, the college is accredited by the Western Association of Schools and Colleges and the California State Board of Education).

The college is dedicated to equipping graduates with the tools, work ethic and skills to succeed in the ever-changing global economy. This is accomplished through a challenging undergraduate curriculum and an innovative, high quality graduate education in the Donald and Sally Lucas Graduate School of Business.

Undergraduate Education

The college provides a rich undergraduate education through four departments - Accounting and Finance, Management Information Systems, Organization and Management, and Marketing and Decision Sciences. Infused throughout the undergraduate program are opportunities to develop competencies in a number of key areas -- communication, teamwork, global perspectives, critical thinking, entrepreneurship, community service, and innovation. The rigorous and challenging curriculum prepares graduates to be future leaders that succeed in the global economy.

The college is building upon its existing expertise in entrepreneurship, management, global finance, and leadership and organizational change to create a multi-track Center for Global Business Competition and Innovation. In addition, the college showcases the best and brightest students through two college-wide programs, the Gary J. Sbona Honors Program and Silicon Valley Connections, a program that takes students to visit local corporations and meet executives.

Donald and Sally Lucas Graduate School of Business

The Donald and Sally Lucas Graduate School of Business provides an innovative, high quality business education that delivers thought solutions to the Silicon Valley and global business community. The graduate education is supported by shared core values that respect individual efforts and contributions, inclusiveness and collaboration, and lifelong learning and professional development.

The Lucas Graduate School of Business offers a range of graduate degrees through its Masters in Business Administration program and Masters of Science programs. These programs are infused with a global focus and deliver high value education that positions graduates to succeed in the competitive and ever-changing global marketplace. Programs include a full-time MBA, part-time MBA, a full-time one-year MBA, an MS in Accountancy, an MS in Taxation and an MS in Transportation Management.

Business Student Advisement Center

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

Business Tutoring Center

The Tutoring Center gives individual and group assistance to business students seeking subject matter tutoring. It is located on the ground level of the Boccardo Business Education Center.

Connie L. Lurie College of Education

Dean's Office

Sweeney Hall 103
408-924-3600
www.sjsu.edu/education/

Child and Adolescent Development

Communicative Disorders and Sciences

Counselor Education

Educational Leadership

Elementary Education

Instructional Technology

Secondary Education

Special Education

The Connie L. Lurie College of Education is a learning community dedicated to equity and excellence. Equity initially addresses access and outcomes, and the college works to incorporate equity in action through policy and process. Excellence in a democratic society actualizes each student's unique potential as an individual and as a member of a diverse community. Excellence involves knowledge and skills with a commitment to lifelong curiosity, imagination and learning. The result is the college's commitment to the preparation of educators, including teachers, administrators, counselors and service providers who have the knowledge, skills, dispositions and ethics that ensure equity and excellence for all students in a culturally diverse, technologically complex global community.

The college offers bachelor's and master's degrees and a number of professional credentials. Programs are offered through eight academic departments which are supplemented by a variety of resources including the Armstead Center for Communication Disorders, the Child Development Laboratory and the Technology Production Laboratory. The college, housed in William Sweeney Hall, offers two computer laboratories that are open to both undergraduate and graduate students. Students also have access to other high tech education applications.

Student Service Centers

The **Kay A. Armstead Center for Communication Disorders** provides observation, diagnostic evaluation and clinical practicum opportunities to undergraduate students and advanced clinical practicum to graduate students.

The **Richard Brandt Technology Reading Collection** was dedicated to the college in 2001 and includes more than 100 titles chronicling the emergence of the technology boom.

The **Child Development Laboratory** is housed in two locations on the SJSU campus, including infant, toddler and pre-school labs. These programs provide undergraduates with both observation and hands-on clinical/practicum opportunities.

The **Technology Production Laboratory** supports faculty coursework and facilitates student needs in the use of computers and development of multimedia materials. Future teachers are exposed to the tools that are needed in the 21st century as well as skills required for teaching certification in California.

The **Center for Careers in Education** in Sweeney Hall 109 provides prospective students information about the various professional preparation programs in education offered by the college.

The **Office of Credentials and Student Services** in Sweeney Hall 108 provides students with information about the California Basic Education Skills Test (CBEST), PRAXIS MSAT (Multiple Subject Assessments for Teachers), MSAT and Subject Assessments section of PRAXIS. General information on elementary (Multiple Subject), secondary (Single Subject) and specialist teaching credentials, as well as other credential and certificate programs, are available through the office.

Advisement

Advising and information related to applications are handled through the eight academic departments. These departments include Child and Adolescent Development, Communicative Disorders and Sciences, Counselor Education, Educational Leadership, Elementary Education, Instructional Technology, Secondary Education and Special Education.

Charles W. Davidson College of Engineering

Dean's Office

Engineering Building, Room 493
408-924-3800
www.engr.sjsu.edu

Aviation

Chemical and Materials Engineering

Civil and Environmental Engineering

Computer Engineering

Electrical Engineering

General Engineering

Industrial and Systems Engineering

Mechanical and Aerospace Engineering

Software Engineering

Technology

The Charles W. Davidson College of Engineering offers ten engineering curricula leading to BS and MS degrees in aerospace, chemical, civil, computer, electrical, general, industrial and systems, materials, mechanical and software engineering. The college also has BS degree programs in aviation and in technology and a MS degree program in quality assurance. California provides, through community colleges, the California State University and the University of California, coordinated educational programs designed to meet local and statewide needs in engineering and engineering technology.

College Vision

To be a learning community that empowers its students to better the world through innovative applications of engineering knowledge and skills.

Better the World

To achieve this vision, we intend to implement programs that will provide students an understanding of the social and economic context in which technologies are developed and used. Further, students also need to gain a firm ethical grounding, and guidance for their beneficial applications. The applications could be for social benefit, economic advancement, security, or the environmental sustainability of the world. In particular, our students need to understand the economic forces that shape the role of American engineers in today's competitive global economy.

Engineering Knowledge and Skills

Engineers develop their capabilities based on scientific knowledge and analytical methods. Our students need to acquire a solid foundation in the knowledge and methods that will prepare them for life-long learning in today's rapidly advancing world of technology. Further, in order to be competitive, our students must have superior knowledge of engineering theory and honed skills in the application of theory-to-practice. They need to master engineering topics that correspond to industry issues and trends as well as evolving global requirements.

Innovative Applications

In addition to learning engineering theory and skills, our students must have opportunities to learn innovation—a capability highly valued in today's global economy. Given its close ties to Silicon Valley industry, the College is in a unique position to focus its efforts on developing innovative applications of technologies. Innovation, defined as the development and exercise of creative processes to "see" beyond limits and boundaries, has the entrepreneurial quality of understanding and meeting customers' needs. It often occurs across disciplinary boundaries with contributing members having various functional expertise. Further, the ability to innovate contributes directly to the success of enterprises. Our vision for the College articulates our aspiration to inspire and educate our students to develop engineering capabilities as well as to understand the context in which such capabilities are used with the end goal of benefiting humanity.

College Mission

We will provide empowering educational opportunities to students for their technical professional and social development in a competitive and dynamic global society. We will build a vibrant community of students, faculty, staff, alumni, and industry professionals through strategic collaborations with Silicon Valley, California, national and global partners.

College of Humanities and the Arts

Dean's Office

Washington Square Hall, Room 120
408-924-4300
408-924-4365 (Fax)
www.sjsu.edu/humanities

Art and Design

English and Comparative Literature

Foreign Languages

Humanities

Linguistics and Language Development

Music and Dance

Philosophy

Television, Radio, Film and Theatre

The College of Humanities and the Arts seeks to instill in students an understanding of human existence that is tolerant, moral and appreciative of human creativity as manifested in works of language and literature, the visual and performing arts, philosophy and theology, and by engagement in the creation of art and criticism.

Through its programs, the College aims to develop engaged participants in the local communities as well as in the global dimension of cultural, intellectual, and economic life. College faculty educate students for lifelong learning as well as for their first job after graduation. Building upon a foundation of excellent oral and written communication, the College helps students pursue a wide variety of paths to knowledge and careers, through specialized study in many fields, including art history, animation, comparative literature, dance, film, foreign languages, musical composition and performance, painting, radio broadcasting, sculpture, television, linguistics, comparative religion, philosophy, and technical and creative writing.

Faculty in all disciplines of the College engage in research published by major scholarly journals and university presses, supported by the major national grants and foundations, and presented at the major international scholarly conferences. Artists within the College publish in important literary journals, exhibit at nationally recognized venues, or participate in prestigious performing arts productions. Throughout the College, faculty seek to produce scholarship or creative works that achieve national recognition.

College curricula develop the individual's power to communicate effectively and to analyze critically the conditions upon which cultural perceptions are built. Courses in the College attempt to reveal the evolving aspiration toward aesthetic and intellectual power in human cultures by exposing the student to important ideas, achievements, and experiences in the humanities and the creative arts. In its many professional arts programs, the College develops the talent of those who have the skill to perform or create works of art, fixing in vivid form the values of diverse heritages. In its programs in language, literature, philosophy, and other areas of the humanities, the College engages students in the discovery and exploration of works from around the world that deepen understanding of how human imagination and intellect function within different historical and cultural contexts. A primary purpose of a humanities education is to develop the skills and confidence that support a creative, analytical mind capable of lifelong learning and adaptation to different contexts and opportunities.

Through its General Education, Arts, and many scholarly programs and research units, such as the Center for Literary Arts, the Martha Heasley Cox Center for Steinbeck Studies, and the Ira Brilliant Beethoven Center, the College of Humanities and the Arts makes an indispensable contribution to the SJSU community and the region surrounding it.

Internships

Internships provide students with the opportunity to incorporate work experience in a professional setting as part of their academic programs. Internship representatives are available within each department.

Teaching Credential Preparation Programs

Teaching credential preparation programs are offered by the Schools of Art and Design and Music and Dance, the departments of English and Comparative Literature, Foreign Languages, Humanities (Liberal Studies and Creative Arts Programs) and Television, Radio, Film and Theatre.

College of Science

Dean's Office

Science Building 127
408-924-4800
www.science.sjsu.edu

Biological Sciences

Chemistry

Computer Science

Geology

Marine Science

Mathematics

Meteorology

Physics and Astronomy

San José is at the center of Silicon Valley, known worldwide for its research institutes and industries that set the standard for scientific and technological innovation. San José State is the metropolitan university of the region, and the academic programs of the College of Science prepare students for rewarding careers through our bachelor's and master's level degree programs in the biological sciences, physical sciences, mathematics and computer science fields. Our departments have established links with local employers where students find training and employment opportunities.

The College of Science provides the lower division core biology, chemistry, mathematics and physics courses supporting majors in other technical disciplines (such as engineering). As part of the university general education requirements, we offer courses in quantitative reasoning, the physical universe and its life forms, and earth and the environment. Furthermore, we teach the discipline-specific courses for the science and mathematics teacher credential programs.

Successful science students come from many backgrounds. Some enter the university immediately upon graduation from high school. Others, who have work or various life experiences, enroll as either full or part-time students in order to continue their education and better their career opportunities. The maturity, laboratory skills and experience of these students enrich our programs. We have several programs to increase the participation of women and underrepresented students in professional level science.

There are active student clubs associated with each major, several of which have won national recognition for their professional and community service activities. Members provide mutual support and are able to network with professionals in their field.

College-Wide Courses

The college presently offers two college-wide courses for science majors. "Success in Science" (SCI 002) is offered in the fall semester to orient the new science major to the resources of SJSU and to the expectations of the college and the student's major department. This course is strongly recommended to all new science majors. Academic Excellence Workshops (SCI 001) are guided collaborative problem-solving workshops attached to specific sections of introductory courses in the major.

Special Centers

The College of Science has several unique interdisciplinary instructional research centers and programs: the **Biotechnology Education and Research Institute (BERI)**, the **Masters in BioTechnology (MBT)**, the **Center for Applied Mathematics, Computation and Statistics**, the **Center for Mathematics and Computer Science (CAMCOS)**, the **Institute for Modern Optics**, the **Flow Cytometry Core Facility**, the **W.M. Keck Facility for Chemical Research**, the laboratory for **Conservation Genetics**, the **Moss Landing Marine Laboratories**, and the **Nuclear Science Facility**. Partially funded by external grants and contracts, these centers provide our students opportunities to participate in sponsored research projects. Cooperative programs with local industries and government laboratories are additional sources of professional experience and financial support for science majors.

Teaching Credential Programs

Two single subject credential programs are coordinated by the College of Science, in collaboration with the College of Education. The single subject professional programs are designed for individuals who are interested in teaching science or mathematics in middle schools or high schools. The Science Education Program offers single subject credential programs in biology, chemistry, earth science and physics. The Department of Mathematics offers a mathematics single subject credential program. The Department of Biological Sciences offers a BA, Natural Science degree designed for those who are interested in teaching in elementary schools. For detailed information, contact the appropriate program coordinator.

Through the Science Education Program, the College of Science supports the Math and Science Education Resource Center, which provides hands-on science materials, textbooks, reference materials and technical assistance to pre-service and in-service teachers.

College of Social Sciences

Dean's Office

Washington Square Hall 103

408-924-5300

www.sjsu.edu/depts/SocialSciences/socsci.htm

African American Studies

Anthropology

Communication Studies

Economics

Environmental Studies

Geography

Global Studies

History

Mexican American Studies

Political Science

Psychology

Social Sciences

Sociology

Urban and Regional Planning

Pograms in the College of Social Sciences prepare students for work and life in Silicon Valley and a rapidly changing world. Our thirteen departments provide training for careers in counseling, criminology, environmental restoration, computerized mapping, public administration, economic analysis, organizational communication, international relations, ergonomics, urban and regional planning, and countless other fields in business, government, teaching and human services. Major courses of study emphasize the contributions of the many cultures that form our community. Internships are encouraged to help students relate academic work to the opportunities and needs of this diverse region. Completion of one of our undergraduate majors also provides an excellent foundation for advanced graduate work in one of the disciplines or at a professional school such as law or business.

New technologies increasingly improve our instruction and link us to the innovative industry of our region and to the educational resources of the world, but personal interaction between students and faculty is still prized within the College of Social Sciences. Capable and interesting teachers, active student clubs and small classes provide ideal environments for learning. If you are interested in majoring in one of the social sciences, contact an advisor in one of our departments or the dean's office.

Special Centers

The programs of the College of Social Sciences are further enriched by educational, research and training opportunities provided by the following specialized units:

The **Burdick Military History Project** supports the study and teaching of military history through public lectures, the Veterans Oral History Project, and its specialized collection of materials relating to military history. Contact the History Department.

The **Center for Development of Recycling** advances education, research and dissemination of information in various areas of recycling. Contact the Environmental Studies Department.

The **Center for Economic Education** supports improvement in the teaching of economics through a multi-method approach and the dissemination of economics education materials. Contact the Economics Department.

The **East Asian Regional Materials and Resources Center** provides information and counsel about studies in Asia, including library and audio-visual material available to teachers. Contact the History Department.

The **Sourisseau Academy** promotes better understanding and appreciation of California's state and local history, with emphasis on the history of Santa Clara Valley, through graduate scholarships and collections of historical source materials. Contact the History Department.

Teaching Credential Programs

Teacher preparation programs are administered by the Director of Social Science Education within the College of Social Sciences. Both multiple subject and single subject programs are offered. The Environmental Studies Department also offers a multiple subject program, and the Communication Studies Department cooperates with the English Department to prepare students for the single subject credential in English. Contact these departments for details.

Graduate Studies and Research

Graduate Studies & Research

Department: Administration 223
408-924-2427

Admissions: Student Services Center
408-924-2480

www.sjsu.edu/gradstudies/

Special Graduate Programs

Interdisciplinary Studies Major

Interdisciplinary Studies Major

The interdisciplinary Studies Major for either a Master of Arts or a Master of Science degree provides an alternative for individuals whose desired study plans do not fit the degree offerings of any single existing degree program on campus.

For More Information

Graduate students 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 Dean of Graduate Studies.

Accreditation

San José State University is accredited by the Accrediting Commission for Senior Colleges and Universities of the Western Association of Schools and Colleges (WASC), 985 Atlantic Avenue, Suite 100, Alameda, CA 94501, 510-748-9001, one of the six major regional college accreditation agencies in the United States; the California State Board of Education; and by a number of other agencies as follows in special fields. The Teacher Education programs of the University also are accredited by the National Council for Accreditation of Teacher Education and approved by the California Commission on Teacher Credentialing.

Art and Design

- National Association of Schools of Art and Design

Advertising

- Accrediting Council on Education in Journalism and Mass Communications

Business

- Association to Advance Collegiate Schools of Business

Chemistry

- American Chemical Society, Committee on Professional Training

Computer Science

- Accreditation Board for Engineering and Technology, Inc.

Dance

- National Association of Schools of Dance

Dietetics

- American Dietetic Association – Commission on Accreditation for Dietetic Education

Engineering

- Aerospace, Chemical, Civil, Computer, Electrical, Industrial and Systems, Materials, and Mechanical Accreditation Board for Engineering and Technology, Inc.

Human Performance

- National Athletic Trainers Association – Joint Review Committee on Athletic Training

Industrial Technology

- National Association of Industrial Technology

Journalism

- Accrediting Council on Education in Journalism and Mass Communications

Library and Information Science

- American Library Association

Music

- National Association of Schools of Music

Nursing

- California Board of Registered Nursing and Commission on Collegiate Nursing Education

Nutrition and Food Science

- The Institute of Food Technologists uses the term "approved" rather than accredited.

Occupational Therapy

- Accreditation Council for Occupational Therapy Education (ACOTE)

Public Administration

- National Association of Schools of Public Affairs and Administration

Public Health

- Council on Education for Public Health

Public Relations

- Accrediting Council on Education in Journalism and Mass Communications

Recreation

- The National Recreation and Park Association, and the American Association for Leisure and Recreation Council on Accreditation

Social Work

- Council on Social Work Education

Speech Pathology

- American Speech – Language – Hearing Association

Theatre Arts

- National Association of Schools of Theatre

Urban and Regional Planning

- Planning Accreditation Board

Facilities, Organized Research Units and Unique Programs

Library

The Dr. Martin Luther King, Jr. Library, an innovative collaboration that integrates the collections, services and staffs of two major institutions: The SJSU University Library and the San José Public Library is a unique learning and community center where the entire Silicon Valley Community—students, faculty, and residents—can learn for life. The combined collections include more than 1.5 million items and the building houses 33 delightful public art installations.



Research Units

Research units involve industry/university partnerships to enhance technology transfer, encourage development of new products and improve education in the design, development and manufacture of integrated circuits and systems.

Biotechnology Education and Research Institute directs the development of biotechnology through inter-departmental cooperation, serves as a clearinghouse and promotes cooperation between industry, government and the university in biotechnology research and development.

Bureau of Administration of Justice supports research into crime and criminal justice through analysis and evaluation of existing problems and operations.

Center for Applied Mathematics, Computation and Statistics provides an innovative educational program to develop training through practical experience.

Center for Asian Studies provides information and counsel about studies in Asia.

Center for Comparative Philosophy aims at promoting and enhancing the research and scholarship of comparative philosophy. Comparative philosophy considers philosophy in a global context: it emphasizes the constructive engagement between distinct methodological approaches, substantial views, or explanatory resources from different philosophical traditions and/or from the complex array of distinct approaches of the same tradition with a global vantagepoint.

Center for Development of Recycling

is a national clearinghouse for recycling information and for applied waste management research in order to increase the scope and availability of recycling information and to increase the effectiveness of recycling as a solid waste management strategy.

Center for Educational Research on Dyslexia is the only university center in the U.S. focusing on the educational aspects of dyslexia. The Center conducts educational research on dyslexia and maintains an international network of researchers studying dyslexia.

The **Center for Electronic Materials and Devices** provides support services for instruction, research and projects in the area of electronic materials and devices. Its goal is to develop partnerships and joint projects with the industrial community utilizing resources of faculty, students and specific laboratories.

Center for Human Services Development focuses on human services development through behavioral science applications in the community and curriculum.

Center for International Sport and Human Performance promotes and facilitates cross-national and cross-cultural interaction of individuals and their ideas in the context of sport and human performance.

Center for Literary Arts provides programs featuring major contemporary writers, poets and scholars.

The **Collaborative for Disaster Mitigation (CDM)** is a proactive partnership of the public, private and academic sectors to encourage and facilitate implementation of mitigation measures to minimize the consequences of natural and other disasters.

Computers in Art, Design, Research and Education (CADRE) Institute develops experimental applications of computer technology in fine art and design, provides state-of-the-art computer facilities for art/design instruction, explores applications of interactive media to education and stimulates industry sponsorship of visualization and interactive systems research.

Institute for Metropolitan Studies facilitates the exchange of knowledge and expertise regarding urban problems and critical matters related to metropolitan development.

Institute for Modern Optics facilitates communication, collaboration, and coordination in the area of lasers and optics and promotes research projects in non-linear effects at surfaces, laser beam characteristics, two-wave laser mixing, holography, light emission from thin film tunnels, and laser spectroscopy.

Institute for Research and Development in Education (IRDE)

encourages educational research which bridges the gap between educational policy and practice, and supports development and evaluation of innovative practices in public education.

Institute for Social Responsibility and Ethics in Education facilitates the planning and coordination of research-related activities concerned with issues of professional and business ethics.

Institute of Nursing Research and Practice promotes the climate of inquiry within the School of Nursing by coordinating and promoting research projects and interests of nursing faculty in order to develop innovative models for nursing research, practice, and education.

International Institute for Surface Transportation Policy Studies (IISTPS)

was established by federal legislation in 1991 with two complementary missions: education and research. The educational aim is to prepare students of diverse socioeconomic and ethnic backgrounds for careers in surface transportation operations and management. IISTPS also serves as a major resource for applied research and development fostering the creation and advancement of urban and interurban transportation systems at a national level.

Ira F. Brilliant Center for Beethoven Studies is the only research facility and document repository in North America dedicated solely to the study of the life of and performance of the works of Ludwig van Beethoven.

Martha Heasley Cox Steinbeck Research Center houses one of the most extensive collections of the Nobel Prize-winning author's manuscripts, letters, photographs and artifacts, fostering research concerning the life and work of the author.

Pacific Rim Institute promotes and facilitates cooperative research and scholarly projects between the University and countries bordering the Pacific Ocean.

The **Silicon Valley Center for Entrepreneurship** aims to promote interdisciplinary research that is valuable to entrepreneurs and aspiring entrepreneurs, support academic departments in developing an

entrepreneurship curriculum informed by research, foster an entrepreneurial mindset among students, and strengthen the connective fabric of innovation and entrepreneurship within the university and in Silicon Valley.

Sourisseau Academy promotes better understanding of California's state and local history with emphasis on the history of Santa Clara Valley through graduate scholarships and collections of historical source materials.

Survey and Policy Research Institute operates as a model for excellence in survey and policy research while providing a consulting service on various aspects of survey research to the SJSU campus, governments, non-profit agencies and businesses.

The **W.M. Keck Facility for Chemical Research** is located in Duncan Hall and provides laboratory space and instrumentation for advanced scientific research in chemically related disciplines.

Other Facilities

Africana Center functions both as a library resource center and a community center, with the goals of scholarship, leadership, and community responsibility about and for Africana people, a term that refers to all people of African descent. The Africana Center supports and sponsors programs and scholarship specific to Africana life, history and culture.

Art Foundry, located one mile south of campus, provides facilities for casting and fabricating large-scale sculptures in bronze, aluminum, iron and steel as well as work in stone and other materials.

Asian American Resource Center is a place to study, research, gather and connect to SJSU. Community members bridge the gap between SJSU and the rich history and contributions of Asian-Americans to this region.

Aviation Facility provides hands-on aviation operation and maintenance experience from its classroom, laboratory and hanger facility at San José.

Biological Sciences Research Collections include entomology, herpetology, vertebrate and invertebrate museums and the Carl Sharsmith Herbarium.

Chicano Resource Center provides a single locus for books, periodicals, reference tools, pamphlets and clippings relating to Mexican-American history, culture and community.

Electro-Acoustical Studios offer undergraduate music students access to digital synthesizers.

Engineering Laboratories are state-of-the-art, the result of a \$41 million project supported by many of the nation's leading high technology corporations.

Phyllis Forward Simpkins International House

is a large residence hall, located one block from campus, that is home to overseas and U.S. students interested in widening their international experience.

International and Extended Studies Classroom Building

houses Studies in American Language and professional development courses off campus at a classroom and computer lab complex two blocks southwest of campus.

Journalism Laboratories include the newsroom and advertising offices of the Spartan Daily, the studios of television's Update News, and the production room of the student magazine, Access, that provide applied experience in specific media

Moss Landing Marine Laboratories

provides access to the geologically and biologically important Monterey Bay Canyon and to some of the world's richest ocean and salt marsh research areas. The laboratories are served by the deep-sea research ship Point Sur.

Nuclear Science Laboratory is the only radiochemistry lab in the Western World available for both graduate and undergraduate classes.

Osher Lifelong Learning Institute (OLLI)

is a learning community for people age 50 and better. Classes and programs are offered throughout the Santa Clara Valley and in a variety of convenient timeframes. There are no papers, tests or grades. More information and the class schedule are located at www.osher.sjsu.edu.

Science Education Resource

Materials Center makes available to student teachers educational aids for science classes, including live fauna and geological models.

Speech and Hearing Center is an on-campus multilingual audiology and speech pathology community clinic.

Degrees and Majors

AEROSPACE STUDIES	
DEPARTMENT (AIR FORCE ROTC)	
Minor, Aerospace Studies	
AFRICAN STUDIES	
Minor, African Studies	
AFRICAN-AMERICAN STUDIES	
BA, African American Studies	
Minor, African American Studies	
AMERICAN STUDIES	
Minor, American Studies	
ANTHROPOLOGY	
BA, Anthropology	
BA, Behavioral Science	
Double Major in Anthropology	
Minor, Anthropology	
Minor, Native American Studies	
MA, Applied Anthropology	
ART AND DESIGN	
BA, Art, Concentration in Art History and Visual Culture	
BA, Art, Concentration in Design Studies	
BA, Art, Concentration in Studio Practice	
BA, Art, Concentration in Studio Practice, Preparation for Teaching	
BFA, Art, Concentration in Animation/Illustration	
BFA, Art, Concentration in Digital Media Art	
BFA, Art, Concentration in Photography	
BFA, Art, Concentration in Pictorial Art	
BFA, Art, Concentration in Spatial Art	
BFA, Graphic Design	
BS, Industrial Design	
BFA, Interior Design	
Minor, Art Education	
Minor, Art History and Visual Culture	
Minor, Graphic Design	
Minor, Interior Design	
Minor, Photography	
Minor, Studio Art	
MA, Art, Concentration in Art	
MA, Art, Concentration in Art Education	
MA, Art, Concentration in Art History and Visual Culture	
MFA, Art, Concentration in Digital Media Art	
MFA, Art, Concentration in Photography	
MFA, Art, Concentration in Pictorial Arts	
MFA, Art, Concentration in Spatial Arts	
ASIAN STUDIES	
Minor, Asian Studies	
AVIATION	
BS, Aviation	
Minor, Aviation	
BEHAVIORAL SCIENCES	
BA, Behavioral Science	
BA, Behavioral Science, Double Major in Anthropology	
BA, Behavioral Science, Double Major in Psychology	
BA, Behavioral Science, Double Major in Sociology	
BIOLOGICAL SCIENCES	
BA, Biological Sciences	
BA, Biological Sciences, Preparation for Teaching	
BA, Natural Science, Preparation for Teaching	
BA, Natural Science, Concentration in Biodiversity Stewardship	
BS, Biological Sciences, Concentration in Conservation and Organismal Biology	
BS, Biological Sciences, Concentration in Marine Biology	
BS, Biological Sciences, Concentration in Microbiology	
BS, Biological Sciences, Concentration in Molecular Biology	
BS, Biological Sciences, Concentration in Systems Physiology	
Minor, Biological Sciences	
Minor, Biological Sciences, Preparation for Teaching	
Minor, Science	
MS, Biological Sciences	
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	
BUSINESS	
BS, Business Administration, Concentration Accounting	
BS, Business Administration, Concentration in Finance	
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	
BS, Business Administration, Concentration in Accounting Information Systems	
BS, Business Administration, Concentration in Corporate Financial Management	
Minor, Business	
MBA, Master of Business Administration	
MS, Accountancy	
MS, Taxation	
MS, Transportation Management	
CHEMICAL AND MATERIALS ENGINEERING	
BS, Chemical Engineering	
BS, Materials Engineering	
Minor, Materials Science and Engineering	
MS, Chemical Engineering	
MS, Materials Engineering	
CHEMISTRY	
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	
CHILD AND ADOLESCENT DEVELOPMENT	
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	
CIVIL AND ENVIRONMENTAL ENGINEERING	
BS, Civil Engineering	
MS, Civil Engineering	
COMMUNICATION STUDIES	
BA, Communication Studies	
BA, Communication Studies, Preparation for Teaching	
Minor, Speech Communication	
Minor, Communication in the Information Age	
MA, Communication Studies	
COMPUTER ENGINEERING	
BS, Computer Engineering	
BS, Software Engineering (Jointly with Computer Science Department)	
MS, Computer Engineering	
MS, Software Engineering	
COMPUTER SCIENCE	
BS, Computer Science	
BS, Software Engineering (Jointly with Computer Engineering Department)	
Minor, Computer Science	
Certificate, Unix Systems Administration	
MS, Computer Science	
CREATIVE ARTS	
BA, Creative Arts	
BA, Creative Arts, Preparation for Teaching	
Minor, Creative Arts	
ECONOMICS	
BA, Economics	
BS, Economics	
Minor, Economics	
MA, Economics	
MA, Economics, Concentration in Applied Economics	
EDUCATION – COMMUNICATIVE DISORDERS AND SCIENCES	
BA, Communicative Disorders and Sciences	
Minor, Speech Pathology	
MA, Education, Concentration in Speech Pathology	
EDUCATION – COUNSELOR EDUCATION	
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	
EDUCATION – EDUCATIONAL LEADERSHIP	
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	
EDUCATION – ELEMENTARY EDUCATION	
Minor, Education	
Credential, Multiple Subject	
Credential, Multiple Subject BCLAD	
MA, Education, Concentration in Curriculum and Instruction	
EDUCATION – INSTRUCTIONAL TECHNOLOGY	
Certificate, Professional Instructional Technology	
Certificate, Training Methods for Business and Industry	
Certificate, Computer Concepts and Applications	
MA, Education, Concentration in Instructional Technology	
EDUCATION – SECONDARY EDUCATION	
Credential, Single Subject	
EDUCATION – SPECIAL EDUCATION	
Minor, Atypical Child Studies	
Minor, Deaf Education	
Minor, Special Education	
Certificate, Early Childhood Specialist Credential, Deaf and Hard of Hearing Credential, Early Childhood Special Education	
Credential, CTC Approved Certificate Program	
Credential, Mild/Moderate Disabilities Credential, Moderate/Severe Disabilities MA, Education, Concentration in Special Education	
ELECTRICAL ENGINEERING	
BS, Electrical Engineering	
MS, Electrical Engineering	
ENGLISH AND COMPARATIVE LITERATURE	
BA, English	
BA, English, Concentration in Career 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	
ENVIRONMENTAL STUDIES	
BS, Environmental Studies	
BS, Environmental Studies, Concentration in Energy	
BA, Environmental Studies	
BA, Environmental Studies, Preparation for Teaching	
BS, Environmental Studies, Concentration in Environmental Impact Assessment	
Minor, Environmental Studies	
Minor, Energy and the Environment	
Minor, Park Ranger and Administration	
MS, Environmental Studies	
FOREIGN LANGUAGES	
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, Spanish	
Minor, Italian	
Minor, Japanese	
Minor, Russian	
MA, French	
MA, Spanish	
GENERAL ENGINEERING	
BS, General Engineering	
Minor, Bioengineering	
MS, Engineering	
MS, Engineering, Concentration in Biomedical Devices	
GEOGRAPHY	
BA, Geography	
Minor, Geography	
Minor, Geographic Information Science	
MA, Geography	
Certificate, Geographic Information Science	

GEOLOGY BS, Geology BA, Earth Science Minor, Geology MS, Geology	INTERDISCIPLINARY STUDIES MA, Interdisciplinary Studies MS, Interdisciplinary Studies	MEXICAN AMERICAN STUDIES Minor, Mexican American Studies MA, Mexican American Studies	SCIENCE EDUCATION BA, Biological Sciences, Preparation for Teaching BA, Chemistry, Preparation for Teaching BA, Earth Science BA, Natural Science, Preparation for Teaching BA, Physics, Preparation for Teaching MA, Natural Science
GERONTOLOGY BS, Health Science, Concentration in Gerontology Minor, Gerontology Certificate, Applied Social Gerontology	JEWISH STUDIES Minor, Jewish Studies	MIDDLE EAST STUDIES Minor, Middle East Studies	
GLOBAL STUDIES BA, Global Studies Minor, Global Studies	JOURNALISM AND MASS COMMUNICATIONS BS, Advertising BS, Journalism BS, Public Relations Minor, Advertising Minor, Journalism Minor, News Media Design Minor, Public Relations MS, Mass Communications	MILITARY SCIENCE (ARMY ROTC) Minor, Military Science	
HEALTH PROFESSIONS Minor, Health Professions Minor, Complementary and Alternative Health Practices Certificate, Complementary and Alternative Health Practices	JUSTICE STUDIES BS, Justice Studies BS, Forensic Science, Concentration in Biology BS, Forensic Science, Concentration in Chemistry Minor, Justice Studies Minor, Legal Studies MS, Justice Studies	MUSIC AND DANCE BA, Music BA, 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 Minor, Music Minor, Dance MA, Music	
HEALTH SCIENCE 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	KINESIOLOGY BS, Kinesiology BS, Kinesiology, Concentration in Athletic Training Minor, Kinesiology BS, Kinesiology, Preparation for Teaching MA, Kinesiology	NURSING BS, Nursing MS, Nursing Certificate, California School Audiometrist Credential, School Nurse	
HISTORY BA, History BA, History, Social Science Single Subject Teacher Candidates 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	LATIN AMERICAN STUDIES Minor, Latin American Studies	NUTRITION AND FOOD SCIENCE 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	
HOSPITALITY, RECREATION AND TOURISM MANAGEMENT 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	LIBRARY AND INFORMATION SCIENCE Credential, California Library Media Teacher Services MLIS, Master of Library and Information Science	OCCUPATIONAL THERAPY BS, Occupational Therapy MS, Occupational Therapy (Pattern I) MS, Occupational Therapy (Pattern II)	
HUMANITIES BA, Humanities BA, Liberal Studies (Liberal Arts) BA, Liberal Studies, Preparation for Teaching Minor, American Studies Minor, Humanities Minor, Middle East Studies Minor, Asian Studies BA, Creative Arts Minor, Creative Arts BA, Religious Studies Minor, Religious Studies	LINGUISTICS AND LANGUAGE DEVELOPMENT BA, Linguistics BA, Linguistics, Preparation for Teaching Minor, Linguistics Certificate, Computational Linguistics Certificate, Undergraduate TESOL Certificate, Graduate TESOL MA, Linguistics MA, Teaching English to Speakers of Other Languages (TESOL)	PHILOSOPHY BA, Philosophy Minor, Philosophy MA, Philosophy	
INDUSTRIAL AND SYSTEMS ENGINEERING BS, Industrial and Systems Engineering Minor, Engineering Management Minor, Statistical Quality Engineering MS, Industrial and Systems Engineering MS, Human Factors/Ergonomics	MARINE SCIENCE MS, Marine Science	PHYSICS AND ASTRONOMY BA, Physics BA, Physics, Preparation for Teaching BS, Physics Minor, Physics Minor, Astronomy MS, Physics MS, Physics, Concentration in Computational Physics	
	MATHEMATICS DEPARTMENT BA, Mathematics BA, Mathematics, Preparation for Teaching BS, Applied and Computational Mathematics Minor, Mathematics Minor, Mathematics, For K–8 Teachers MS, Mathematics MA, Mathematics MA, Mathematics, Concentration in Mathematics Education	POLITICAL SCIENCE BA, Political Science Minor, Political Science Minor, Public Administration and Public Policy MPA, Master of Public Administration	
	MECHANICAL AND AEROSPACE ENGINEERING BS, Mechanical Engineering BS, Aerospace Engineering MS, Mechanical Engineering MS, Aerospace Engineering	PSYCHOLOGY BA, Psychology BS, Psychology BA, Behavioral Science, Double Major in Psychology Minor, Psychology MA, Psychology MS, Psychology, Concentration in Clinical Psychology MS, Psychology, Concentration in Industrial/Organizational Psychology	
	METEOROLOGY BS, Meteorology Minor, Meteorology Minor, Atmospheric and Seismic Hazards	RELIGIOUS STUDIES (COMPARATIVE) BA, Religious Studies MS, Meteorology	
			VALUES, TECHNOLOGY AND SOCIETY Minor, Values Technology and Society

Interest Areas and Programs

A

ACCOUNTANCY

Degree Major: MS/Accountancy
Department/Program: Accounting and Finance

ACCOUNTING

Concentration
 Minor
Degree Major: BS/Business Administration
Department/Program: Accounting and Finance

ACOUSTICS, ELECTRO

Area of Interest or Specialization
Degree Major: BM/Music
Department/Program: Music and Dance

ACTING

Area of Interest or Specialization
Degree Major: Television, Radio, Film & Theatre

ADAPTED PHYSICAL EDUCATION

Area of interest or specialization
 Emphasis
 Graduate Option
Degree Major: BS/MA/Kinesiology
Department/Program: Kinesiology

ADMINISTRATION AND SUPERVISION

Graduate Option
Degree Major: MA/Education
Department/Program: Educational Leadership

ADMINISTRATIVE SERVICES

Credential
Degree Major: BA/Office Administration
Department/Program: Educational Leadership

ADMINISTRATION OF JUSTICE

Degree Major: BS/Justice Studies
Degree Major: BA/Justice Studies
Department/Program: Justice Studies

ADVERTISING

Minor
Degree Major: BS/Advertising
Degree Major: BA/Advertising
Degree Major: BA/Journalism and Mass Communication

AEROSPACE ENGINEERING

Degree Major: BS/MS/Aerospace Engineering
Degree Major: BA/Aerospace Engineering
Degree Major: BA/Mechanical and Aerospace Engineering

AEROSPACE STUDIES

Minor
Degree Major: BA/Aerospace Studies

AFRICAN AMERICAN STUDIES

Minor
Degree Major: BA/African American Studies
Degree Major: BA/Black Studies
Degree Major: BA/Political Science

AFRICAN DIASPORA HISTORY/SOCIAL RELATIONS/CULTURE

Area of interest or specialization
Degree Major: BA/African-American Studies
Degree Major: BA/Political Science

AFRICAN HISTORY/SOCIAL RELATIONS

Area of Interest or Specialization
Degree Major: BA/African-American Studies

AFRICAN STUDIES

Minor
Degree Major: BA/Political Science

AFRO-LATINOS, ETHIOPIANS, ERITREANS, SOMALIS

Area of Interest or Specialization
Degree Major: BA/African-American Studies

AGING

Area of Interest or Specialization
 Graduate Option
Degree Major: MSW
Degree Major: BA/Social Work
Degree Major: BA/Nursing

AIR POLLUTION

Area of Interest or Specialization
Degree Major: Meteorology

ALTERNATIVE MEDICINE

Area of Interest or Specialization
Degree Major: Health Professions
Degree Major: Health Professions

AMERICAN INDIAN HISTORY

Area of Interest or Specialization
Degree Major: History

ANCIENT AND MEDIEVAL HISTORY

Minor
Degree Major: History

AMERICAN STUDIES

Emphasis
 Minor
Degree Major: BA/Humanities
Degree Major: BA/History

ANIMATION

Concentration
 Graduate Option
Degree Major: BFA/ART
Degree Major: BA/Animation

ANTHROPOLOGY

Minor
Degree Major: BA/Anthropology
Degree Major: BA/Archaeology

APPLIED AND COMPUTATIONAL MATHEMATICS

Degree Major: BS/Applied and Computational Mathematics
Degree Major: BA/Mathematics
Degree Major: BA/Computational Mathematics

APPLIED ECONOMICS

Concentration
Degree Major: BA/Economics
Degree Major: BA/Finance

APPLIED PHILOSOPHY

Area of Interest or Specialization
Degree Major: BA/Philosophy
Degree Major: BA/Philosophy

ARCHEOLOGY

Area of Interest or Specialization
Degree Major: BA/Anthropology

ARCHIVES & RECORDS ADMINISTRATION

Degree Major: BA/Library and Information Science
Degree Major: BA/Information Science
Degree Major: BA/Library and Information Science

AREA STUDIES

Minor
Degree Major: BA/History

ART

Concentration
 Minor
 Graduate Option
Degree Major: BA/BFA/Art
Degree Major: BA/MA/Art
Degree Major: BA/MFA/Art

ART HISTORY & VISUAL CULTURE

Concentration
 Minor
 Graduate Option
Degree Major: BA/MA Art
Degree Major: BA/MA Visual Arts

ASIAN AMERICAN STUDIES

Minor
Degree Major: BA/Social Sciences

ASIAN HISTORY

Minor
Degree Major: History

ASTRONOMY

Minor
Degree Major: Physics

ATHLETIC TRAINING

Concentration
 Graduate Option
Degree Major: BS/MA/Kinesiology
Degree Major: BA/Kinesiology

ATMOSPHERIC & SEISMIC HAZARDS

Minor
Degree Major: Meteorology

ATYPICAL CHILD STUDIES

Minor
 Area of Interest or Specialization
Degree Major: Special Education
Child and Adolescent Development

SPEECH PATHOLOGY

Minor
 Concentration
Degree Major: BA/Communicative Disorders & Sciences
Degree Major: MA/Education
Degree Major: BA/Communication Disorders & Sciences
Degree Major: BA/Communication Sciences

AVIATION

Minor
Degree Major: BS/Aviation
Degree Major: BA/Aviation

B

BEHAVIORAL SCIENCE

Degree Major: BA/Behavioral Science
Degree Major: BA/Anthropology/Psychology/
Sociology

BIODIVERSITY

Concentration
Degree Major: BA/Natural Science
Degree Major: BA/Biological Sciences

NATURAL RESOURCE MANAGEMENT

Area of Interest or Specialization
Degree Major: BA/Biological Sciences/
Environmental Studies

BIOENGINEERING

Minor
Degree Major: General Engineering

BIOINFORMATICS

Area of Interest or Specialization
Degree Major: Biological Sciences

BIOLOGICAL SCIENCE

Minor
Degree Major: BA/BS/MA/MS Biological Science
Degree Major: BA/BS/MA/MS Biological Sciences

BIOLOGY

Minor
Department/Program: Biological Sciences

BIOTECHNOLOGY

Area of Interest or Specialization
Degree Major: BS/MS/Chemical Engineering
Department/Program: Chemical and Materials Engineering
Degree Major: MS/Engineering, Concentration in Biomedical Devices

BOTANY

Emphasis
Degree Major: BS/Biological Science
Department/Program: Biological Sciences

BUSINESS ADMINISTRATION

Degree Major: BS/Business Administration
MBA/Business Administration
Department/Program: College of Business

C**CARTOGRAPHY**

Area of Interest or Specialization
Department/Program: Geography

CAREER WRITING

Concentration
Degree Major: BA/English
Department/Program: English

CHEMICAL ENGINEERING

Degree Major: BS/MS/Chemical Engineering
Department/Program: Chemical and Materials Engineering

CHEMISTRY

Minor
Degree Major: BA/BS/Chemistry
Department/Program: Chemistry

CHILD ABUSE

Area of Interest or Specialization
Department/Program: Justice Studies

CHILD DEVELOPMENT

Minor
Degree Major: BA/MA/Child Development
Department/Program: Child and Adolescent Development

CHILD WELFARE

Area of Interest or Specialization
Degree Major: MSW
Department/Program: Social Work

CHILDREN AND YOUNG ADULT LITERATURE

Area of Interest or Specialization
Department/Program: Library and Information Sciences

CHILDREN AND YOUTH SERVICES

Area of Interest or Specialization
Degree Major: MSW
Department/Program: Social Work

CHINESE

Minor
Degree Major: BA/Chinese
Department/Program: Foreign Languages

CIVIL ENGINEERING

Degree Major: BS/MA/Civil Engineering
Department/Program: Civil & Environmental Engineering

CIVIL RIGHTS

Area of Interest or Specialization
Department/Program: Justice Studies

CLIENT/SERVER COMPUTING

Area of Interest or Specialization
Degree Major: MS/Engineering
Department/Program: General Engineering

CLINICAL LABORATORY

Area of Interest or Specialization
Department/Program: Biological Sciences

CLINICAL NURSE SPECIALIST

Graduate Option
Degree Major: MS/Nursing
Department/Program: Nursing

CLINICAL PSYCHOLOGY

Area of Interest or Specialization
Department/Program: Psychology

CLONING

Area of Interest or Specialization
Department/Program: Biological Sciences

COACHING

Area of Interest or Specialization
Department/Program: Kinesiology

COASTAL RESOURCE MANAGEMENT

Area of Interest or Specialization
Department/Program: Environmental Studies

COGNITIVE PSYCHOLOGY

Area of Interest or Specialization
Department/Program: Psychology

COMMUNICATION

Degree Major: BA/MA/Speech Communication
Department/Program: Communication Studies

COMMUNICATION DISORDERS AND SCIENCE

Degree Major: BA/Communicative Disorders and Sciences
Department/Program: Communicative Disorders & Sciences

COMMUNICATION IN THE INFORMATION AGE

Minor
Department/Program: Communication Studies

COMMUNITY CHANGE

Concentration
Degree Major: BA/Sociology
Department/Program: Sociology

COMMUNITY HEALTH EDUCATION

Concentration
Degree Major: BS/Health Science
Department/Program: Health Science

COMPARATIVE LITERATURE

Minor
Department/Program: English

COMPARATIVE POLITICS

Area of Interest or Specialization
Department/Program: Political Science

COMPLEMENTARY AND ALTERNATIVE MEDICINE

Area of Interest or Specialization
Department/Program: Health Professions

COMPUTATIONAL PHYSICS

Concentration
Degree Major: MS/Physics
Department/Program: Physics

COMPUTER CONCEPTS AND APPLICATIONS

Certificate Program
Department/Program: Instructional Technology

COMPUTER ART

See Animation, Digital Media Art
Department/Program: Art and Design

COMPUTER TECHNOLOGY, ELECTRONICS &

Concentration
Degree Major: BS/Industrial Technology
Department/Program: Department of Technology

COMPUTER ENGINEERING**COMPUTER ENGINEERING**

Area of Interest or Specialization

DIGITAL AND COMPUTER SYSTEM DESIGN

Area of Interest or Specialization

EMBEDDED SYSTEMS

Area of Interest or Specialization

COMPUTER VISION AND ROBOTICS

Area of Interest or Specialization

COMPUTER NETWORKS AND NETWORK MANAGEMENT

Area of Interest or Specialization

MULTIMEDIA COMPUTING

Area of Interest or Specialization

SOFTWARE ENGINEERING

Area of Interest or Specialization

SOFTWARE ENGINEERING PROCESSES

Area of Interest or Specialization

SOFTWARE ARCHITECTURES

Area of Interest or Specialization

ENTERPRISE APPLICATION ENGINEERING

Area of Interest or Specialization

Degree Major: BS/Computer Engineering/BS/Engineering
Department/Program: Computer Engineering

COMPUTER GRAPHICS

Area of Interest or Specialization

Department/Program: Computer Science

COMPUTER PROGRAMMING

Area of Interest or Specialization

Department/Program: Computer Science

COMPUTER SCIENCE

Minor

Degree Major: BS/MS/Computer Science
Department/Program: Computer Science

CONSERVATION BIOLOGY

Concentration

Degree Major: BS/Biological Science

Department/Program: Biological Sciences

CONSERVATION OF NATURAL RESOURCES

Area of Interest or Specialization

Department/Program: Environmental Studies

CONSTRUCTION MANAGEMENT

Area of Interest or Specialization

Department/Program: Civil and Environmental Engineering

CORRECTIONS

Area of Interest or Specialization

Degree Major: BA/Criminal Justice Administration
Department/Program: Justice Studies

Interest Areas and Programs

CORRECTIVE THERAPY

- Area of Interest or Specialization
- Degree Major: Kinesiology
- Department/Program: Psychology

COUNSELING AND STUDENT PERSONNEL

- Graduate Option
- Degree Major: MA/Education
- Department/Program: Counselor Education

COUNSELING (FAMILY & CHILDREN)

- Degree Major: MSW
- Department/Program: Social Work

COURTS

- Area of Interest or Specialization
- Department/Program: Justice Studies

CRAFTS

- Area of Interest or Specialization
- Degree Major: BA/BFA/MFA/Art
- Department/Program: Art and Design

CREATIVE ARTS

- Minor
- Degree Major: BA/Creative Arts
- Department/Program: Creative Arts

CREATIVE WRITING

- Minor
- Graduate Option
- Degree Major: MFA/Creative Writing
- Department/Program: English

CRIMINAL JUSTICE ADMINISTRATION

- Degree Major: BS/MS Justice Studies
- Department/Program: Justice Studies

CRIMINALITIES

- Area of Interest or Specialization
- Department/Program: Justice Studies

CRIMINOLOGY

- Concentration
- Degree Major: BA/MA/Sociology
- Department/Program: Sociology

CROSS CULTURAL STUDIES

- Emphasis
- Department/Program: Mexican American Studies

CULTURAL HISTORY

- Area of Interest or Specialization
- Department/Program: History

CULTURAL PLURALISM IN THE U.S.

- Area of Interest or Specialization
- Department/Program: Social Sciences

D

DANCE

- Minor
- Degree Major: BA/Dance
- Department/Program: Music and Dance

DATA STRUCTURES

- Area of Interest or Specialization
- Department/Program: Computer Science

DEAF EDUCATION

- Minor
- Department/Program: Special Education

DEMOGRAPHY

- Area of Interest or Specialization
- Department/Program: Geography

DENTISTRY (PRE-DENTISTRY)

- Department/Program: Biological Sciences

DESIGN

- See Graphic, Interior, Industrial

DESIGN STUDIES

- Concentration
- Degree Major: BA/Art
- Department/Program: Art and Design

DIGITAL MEDIA ART

- Concentration
- Graduate Option
- BFA/MFA Art
- Department/Program: Art and Design

DIGITAL MEDIA FOR ART HISTORY AND EDUCATION

- Graduate Option
- Degree Major: MA/Art
- Department/Program: Art and Design

DIETETICS

- Concentration
- Degree Major: BS/Nutritional Science
- Department/Program: Nutrition and Food Science

DIPLOMATIC HISTORY

- Area of Interest or Specialization
- Department/Program: History

DISABILITIES, MILD/MODERATE

- Credential Program
- Department/Program: Special Education

DISABILITIES, MODERATE/SEVERE

- Credential Program
- Department/Program: Special Education

DRAMA

- Minor
- Degree Major: BA/MA/Theatre Arts
- Department/Program: Television, Radio, Film & Theatre

EAST ASIAN STUDIES

- Emphasis
- Degree Major: BA/Humanities
- Department/Program: Humanities

ECONOMICS

- Minor
- Degree Major: BA/BS/MA/Economics
- Department/Program: Economics

EDUCATION

- Minor
- Degree Major: MA/Education
- Department/Program: College of Education

EDUCATION ADMINISTRATION

- ### ADMINISTRATION AND SUPERVISION
- Concentration
 - Department/Program: Educational Leadership

ADMINISTRATIVE SERVICES

- Concentration
- Department/Program: Educational Leadership

ELECTRONICS AND COMPUTER TECHNOLOGY

- Concentration
- Degree Major: BA/Industrial Technology
- Department/Program: Department of Technology

ELECTRONIC MATERIALS AND DEVICES

- Area of Interest or Specialization
- Degree Major: MS/Engineering
- Department/Program: General Engineering

ELEMENTARY EDUCATION

- Graduate Option
- Degree Major: MA/Education
- Department/Program: Elementary Education

ENERGY & THE ENVIRONMENT

- Concentration
- Degree Major: BS/Environmental Studies
- Department/Program: Environmental Studies

ENGINEERING

- Degree Major: BS/MS/Engineering
- Department/Program: General Engineering

ENGINEERING MANAGEMENT

- Area of Interest or Specialization
- Degree Major: MS/Engineering
- Department/Program: General Engineering

ENGLISH

- Degree Major: BA/MA/English
- Department/Program: English

ENVIRONMENTAL IMPACT ASSESSMENT

- Concentration
- Degree Major: BS/Environmental Studies
- Department/Program: Environmental Studies

ENVIRONMENTAL SYSTEMS

- Area of Interest or Specialization
- Degree Major: MS/Engineering
- Department/Program: General Engineering

ENTOMOLOGY

- Emphasis
- Degree Major: BS/Biological Science
- Department/Program: Biological Sciences

ENVIRONMENTAL GEOLOGY

- Degree Major: BS/Earth Science
- Department/Program: Geology

ENVIRONMENTAL ENGINEERING

- Area of Interest or Specialization
- Department/Program: Civil and Environmental Engineering

ENVIRONMENTAL STUDIES

- Minor
- Department/Program: BA/BS/MS/Environmental Studies
- Environmental Studies

ENVIRONMENTAL RESTORATION

- Area of Interest or Specialization
- Department/Program: Environmental Studies

ERGONOMICS

- Graduate Option
- Degree Major: MS/ Human Factors /Ergonomics
- Department/Program: Industrial and Systems Engineering

EUROPE

- Area of Interest or Specialization
- Department/Program: Geography

EUROPEAN STUDIES

- Emphasis
- Degree Major: BA/Humanities
- Department/Program: Humanities

EUROPEAN HISTORY

- Minor
- Department/Program: History

F**FAMILY, SOCIOLOGY OF**

- Concentration

Degree Major: BA/Sociology
Department/Program: Sociology

FAMILY LAW

- Area of Interest or Specialization

Department/Program: Justice Studies

FAMILY SERVICES/FAMILY COUNSELING

Degree Major: MSW

Department/Program: Social Work

FAMILY VIOLENCE

- Area of Interest or Specialization

Department/Program: Justice Studies

FEDERAL LAW ENFORCEMENT

- Area of Interest or Specialization

Department/Program: Justice Studies

FINANCE

- Concentration

Degree Major: BS/Business Administration
Department/Program: Accounting and Finance

FINANCE

- Area of Interest or Specialization

Department/Program: Economics

FINE ARTS

- Concentration

- Area of Interest or Specialization

Degree Major: BA/BFA/MFA/Art

Department/Program: Art and Design

FILM

Degree Major: BA/Radio-Television-Film

Department/Program: TV-Radio-Film-Theatre

FOOD CONSUMER SPECIALIST

- Area of Interest or Specialization

Department/Program: Nutrition and Food Science

FOOD SCIENCE AND TECHNOLOGY

- Concentration

- Minor

Degree Major: BS/MS Nutritional Science

Department/Program: Nutrition and Food Science

FOOD SERVICE MANAGEMENT

- Area of Interest or Specialization

Department/Program: Nutrition and Food Science

FORENSICS

- Area of Interest or Specialization

Department/Program: Anthropology

Biology

Chemistry

Justice Studies

FRENCH

- Minor

Degree Major: BA/MA/French

Department/Program: Foreign Languages

G**GENERAL ENGINEERING**

- Concentration

Department/Program: General Engineering

GENETICS

- Area of Interest or Specialization

Department/Program: Biological Sciences

GENETIC ENGINEERING

- Area of Interest or Specialization

Department/Program: Biological Sciences

GEOGRAPHIC INFORMATION SCIENCE

- Minor

- Certificate Program

Department/Program: Geography

GEOGRAPHY

- Minor

Degree Major: BA/MA/Geography

Department/Program: Geography

GEOLOGICAL ENGINEERING

- Area of Interest or Specialization

Department/Program: Geology

GEOTECHNICAL ENGINEERING

- Area of Interest or Specialization

Department/Program: Civil & Environmental Engineering

GERMAN

- Minor

Degree Major: BA/German

Department/Program: Foreign Languages

GERONTOLOGY

- Concentration

- Certificate Program

Degree Major: BS Health Sciences

Department: Health Science

GERONTOLOGY

- Minor

Department/Program: Gerontology

GERONTOLOGY

- Certificate Program

Department/Program: Gerontology

GERONTOLOGY SOCIAL WORK WITH ELDERLY

- Area of Interest or Specialization

Degree Major: MSW

Department/Program: Social Work

GLASS

- Area of Interest or Specialization

Department/Program: Art and Design

GLOBAL STUDIES

- Minor

Department/Program: Global Studies

GRAPHIC DESIGN

- Minor

Degree Major: BFA Graphic Design

Department/Program: Art and Design

H**HEALTH EDUCATION**

- Emphasis

Degree Major: BS/Health Science

Department/Program: Health Science

HEALTH SERVICES ADMINISTRATION

- Concentration

Degree Major: BS/Health Science

Department/Program: Health Science

HEALTH PROFESSIONS

- Concentration

Department/Program: Health Professions

HEALTH SCIENCE

- Minor

Degree Major: BS/MPH/Health Science

Department/Program: Health Science

HEALTH & MENTAL HEALTH

- Area of Interest or Specialization

Degree Major: MSW

Department/Program: Social Work

HEBREW

- Area of Interest or Specialization

Department/Program: Foreign Languages

HIGHER EDUCATION

- Graduate Option

Degree Major: MA/Education

Department/Program: Educational Leadership

HISTORY

- Minor

Degree Major: BA/MA/History

Department/Program: History

HOSPITALITY MANAGEMENT

Degree Major: BS/Hospitality, Recreation and Tourism Management

Department/Program: Hospitality Recreation and Tourism Management

HOTEL & RESTAURANT MANAGEMENT

- Minor

Department/Program: Hospitality Recreation and Tourism Management

HUMANITIES

- Minor

Degree Major: BA/Humanities

Department/Program: Humanities

HUMAN FACTORS

Degree Major: MS/Human Factors/Ergonomics

Department/Program: Industrial & Systems Engineering

HUMAN RESOURCE MANAGEMENT

- Concentration

Degree Major: BS/Business Administration

Department/Program: Organization and Management

ILLUSTRATION

- Concentration

- Minor

- Graduate Option

Degree Major: BFA/MA/Art

Department/Program: Art and Design

IMPROVISED MUSIC STUDIES

- Area of Interest or Specialization

Degree Major: BA/MA/Music

Department/Program: Music and Dance

INTERDISCIPLINARY STUDIES

Degree Major: MA/MS/Interdisciplinary Studies

Department/Program: Graduate Studies

INDUSTRIAL DESIGN

- Concentration

- Minor

- Graduate Option

Degree Major: BS Industrial Design/MA/Art

Department/Program: Art and Design

Interest Areas and Programs

INDUSTRIAL TECHNOLOGY

Minor
Degree Major: BS/Industrial Technology
Department/Program: Department of Technology

INDUSTRIAL AND SYSTEMS ENGINEERING

Degree Major: BS/MS/ Industrial and Systems Engineering
Department/Program: Industrial and Systems Engineering

INSTRUMENTAL MUSIC

Area of Interest or Specialization
Degree Major: BA/BM/MA/Music
Department/Program: Music and Dance

INSTRUCTIONAL TECHNOLOGY

Graduate Option
 Certificate
Degree Major: MA Education
Department/Program: Instructional Technology

INTERCOLLEGiate ATHLETICS

Area of Interest or Specialization
Department/Program: Intercollegiate Athletics

INTERIOR DESIGN

Minor
Degree Major: BFA Interior Design
Department/Program: Art and Design

INTERNATIONAL BUSINESS

Concentration
Degree Major: BS/Business Administration
Department/Program: Organization and Management
Degree Major: MS, Recreation, Concentration in International Tourism

INTERNATIONAL LAW ENFORCEMENT

Area of Interest or Specialization
Department/Program: Justice Studies

INTERNATIONAL RELATIONS

Area of Interest or Specialization
Department/Program: Political Science

INTERNATIONAL STUDIES

Area of Interest or Specialization
Department/Program: History

ITALIAN

Minor
Department/Program: Foreign Languages

INVESTIGATION

Area of Interest or Specialization
Department/Program: Justice Studies

J

JAPANESE

Minor
Degree Major: BA/Japanese
Department/Program: Foreign Languages

JAZZ

Area of Interest or Specialization
Degree Major: BA/MA/Music
Department/Program: Music and Dance

JEWISH STUDIES

Minor
Department/Program: Jewish Studies

JEWELRY/METALSMITHING

Area of Interest or Specialization
Department/Program: Art and Design

JOURNALISM

Minor
Degree Major: BS/Journalism
Department/Program: Journalism and Mass Communications

JUSTICE STUDIES

Minor
Degree Major: BS/Justice Studies
Department/Program: Justice Studies

JUVENILE JUSTICE

Area of Interest or Specialization
Department/Program: Justice Studies

K

KINESIOLOGY

Minor
Degree Major: BS/Kinesiology
Department/Program: Kinesiology

L

LATIN AMERICA

Area of Interest or Specialization
Social Sciences
Department/Program: Geography

LATIN AMERICAN HISTORY

Minor
Department/Program: History

LATIN AMERICAN STUDIES

Minor
Department/Program: Latin American Studies

LAW ENFORCEMENT

Area of Interest or Specialization
Department/Program: Justice Studies

LEGAL STUDIES

Minor
Degree Major: BS/Justice Studies
Department/Program: Justice Studies

LIBERAL STUDIES

Credential program
Degree Major: BA/Liberal Studies
Department/Program: Humanities

LIBRARY AND INFORMATION SCIENCE

Degree Major: MLIS
Department/Program: Library and Information Science

LIBRARY MEDIA TEACHER SERVICES

Credential Program
Department/Program: Library and Information Science

LINGUISTICS

Minor
Degree Major: BA/MA/Linguistics
Department/Program: Linguistics and Language Development

LITERATURE

Minor
Department/Program: English

LOGIC

Area of Interest or Specialization
Department/Program: Philosophy

M

MAGAZINE JOURNALISM

Emphasis
Degree Major: BS/Journalism
Department/Program: Journalism/Mass Communication

MANAGEMENT

Concentration
Degree Major: BS/Business Administration
Department/Program: Organization and Management

MANAGEMENT INFORMATION SYSTEMS

Concentration
Degree Major: BS/Business Administration
Department/Program: Management Information Systems

MANUFACTURING SYSTEMS

Area of Interest or Specialization
Degree Major: MS/Engineering
Department/Program: General Engineering

MANUFACTURING SYSTEMS

Concentration
Degree Major: BS/Industrial Technology
Department/Program: Department of Technology

MARINE BIOLOGY

Concentration
Degree Major: BS/MA/MS/ Biological Science
Department/Program: Biological Sciences

MARINE SCIENCE

Degree Major: MS/Marine Science
Department/Program: Moss Landing Marine Laboratories

MARKETING

Concentration
Degree Major: BS/Business Administration
Department/Program: Marketing/Decision Sciences

MASS COMMUNICATIONS

Degree Major: MS/Mass Communications
Department/Program: Journalism and Mass Communications

MATERIALS SCIENCE

Concentration
Department/Program: Chemistry

MATERIALS SCIENCE & ENGINEERING

Minor
Degree Major: BS/MS/Materials Engineering
Department/Program: Chemical and Materials Engineering

MATHEMATICS

Minor
Degree Major: BA/MA/Mathematics
Department/Program: Mathematics

MATH FOR K-8 TEACHERS

Minor
Department/Program: Mathematics

MECHANICAL ENGINEERING

Degree Major: BS/MS/Mechanical Engineering
Department/Program: Mechanical and Aerospace Engineering

MEDICINE (PRE-MEDICINE)

Department/Program: Biological Sciences

MEDICAL TECHNOLOGY

Area of Interest or Specialization
Department/Program: Biological Sciences

METEOROLOGY Minor

Degree Major: BS/MS Meteorology

Department/Program: Meteorology

MEXICAN AMERICAN STUDIES Minor

Degree Major: MA/Mexican American Studies

Department/Program: Mexican American Studies

MICROBIOLOGY Concentration

Degree Major: BS/MA/MS/Biological Science

Department/Program: Biological Sciences

MIDDLE EAST STUDIES Minor

Department/Program: Middle East Studies

MILITARY HISTORY Minor

Department/Program: History

MILITARY SCIENCE Minor

Department/Program: Military Science

MINORITIES & LAW Area of Interest or Specialization

Department/Program: Justice Studies

MOLECULAR BIOLOGY Concentration

Degree Major: BS/Biological Science

Department/Program: Biological Sciences

MOVEMENT SCIENCE Emphasis

Degree Major: BS/Kinesiology

Department/Program: Kinesiology

MULTIPLE SUBJECTS CREDENTIAL Credential program

Department/Program: Kinesiology

MUSIC Minor

Degree Major: BA/MA/Music

Department/Program: Music and Dance

MUSIC COMPOSITION Concentration

Degree Major: BM/MA/Music

Department/Program: Music and Dance

MUSIC EDUCATION Area of Interest or Specialization Credential program

Degree Major: BA/MA/Music

Department/Program: Music and Dance

MUSIC INSTRUMENTAL Area of Interest or Specialization

Department/Program: Music and Dance

MUSIC JAZZ Area of Interest or Specialization

Department/Program: Music and Dance

MUSIC KEYBOARD Area of Interest or Specialization

Department/Program: Music and Dance

MUSIC PERFORMANCE

Degree Major: BM/MA/Music

Department/Program: Music and Dance

MUSIC STUDIO ARTS Area of Interest or Specialization

Department/Program: Music and Dance

MUSICAL THEATRE Minor

Department/Program: TV-Radio-Film-Theatre

MUSIC VOCAL Area of Interest or Specialization

Department/Program: Music and Dance

N**NATIVE AMERICAN STUDIES** Minor

Department/Program: Anthropology

NATURAL RESOURCE MANAGEMENT Area of Interest or Specialization

Department/Program: Biological Sciences/Environmental Studies

NATURAL SCIENCE Credential program

Degree Major: BA/MA/Natural Science

Department/Program: Biological Sciences/Science Education

NEUROSCIENCE Area of Interest or Specialization

Department/Program: Biological Sciences/Psychology

NORTH AMERICA Area of Interest or Specialization

Department/Program: Social Sciences

Geography

NURSING

Degree Major: BS/MS/Nursing

Department/Program: Nursing

NURSING , SCHOOL NURSE Credential

Degree Major: MS/Nursing

Department/Program: Nursing

NUTRITION AND FOOD SCIENCE Minor

Department/Program: Nutrition and Food Science

NUTRITION FOR PHYSICAL PERFORMANCE Minor

Department/Program: Nutrition and Food Science

NUTRITIONAL SCIENCE Graduate Option

Degree Major: BS/MS Nutritional Science

Department/Program: Nutrition and Food Science

O**OCCUPATIONAL THERAPY**

Degree Major: BS/MS/Occupational Therapy

Department/Program: Occupational Therapy

OPERA Area of Interest or Specialization

Department/Program: Music and Dance

OPTOMETRY (PRE-OPTOMETRY)

Department/Program: Biological Sciences

OMITHOLOGY Area of Interest or Specialization

Department/Program: Biological Sciences

P**PAINTING** Area of Interest or Specialization Graduate Option

Degree Major: BA/BFA/MFA/Art

Department/Program: Art and Design

PARK RANGER AND ADMINISTRATION Minor

Degree Major: BS/Environmental Studies

Department/Program: Environmental Studies

PHARMACY (PRE-PHARMACY)

Department/Program: Biological Sciences

PHILOSOPHY Minor Graduate Option

Degree Major: BA/MA/Philosophy

Department/Program: Philosophy

PHOTOJOURNALISM Emphasis

Degree Major: BS/Journalism

Department/Program: Journalism and Mass Communication

PHOTOGRAPHY Concentration Minor Graduate Option

Degree Major: BA/BFA/Art

Department/Program: Art and Design

PHYSICAL EDUCATION

Degree Major: BS/MA/Kinesiology

Department/Program: Kinesiology

PHYSICS Minor

Degree Major: BA/BS/MS/Physics

Department/Program: Physics

PHYSIOLOGY, SYSTEMS Concentration

Degree Major: BS/Biological Sciences

POLICE Area of Interest or Specialization

Department/Program: Justice Studies

POLITICAL SCIENCE Minor

Degree Major: BA/Political Science

Department/Program: Political Science

POLITICAL THEORY Area of Interest or Specialization

Department/Program: Political Science/Economics

PORTUGUESE Area of Interest or Specialization

Department/Program: Foreign Languages

PRE-LAW Area of Interest or Specialization

Department/Program: Justice Studies

Economics

History

Philosophy

PRE-MEDICINE Area of Interest or Specialization**Pre-Dentistry****Pre-Pharmacy****Pre-Optometry****Pre-Veterinary**

Department/Program: Biological Sciences

Interest Areas and Programs

PRE-PHYSICAL THERAPY

Degree Major: BS/Kinesiology
Department/Program: Kinesiology

PRE-OPTOMETRY

Department/Program: Health Professions

PRINTMAKING

Area of Interest or Specialization
Department/Program: Art and Design

PROBATION AND PAROLE

Area of Interest or Specialization
Department/Program: Justice Studies

PROFESSIONAL AND TECHNICAL WRITING

Minor
Department/Program: English

PSYCHOLOGY

Minor
Degree Major: BA/MA/MS/Psychology
Department/Program: Psychology

PUBLIC ADMINISTRATION

Degree Major: MPA
Department/Program: Political Science

PUBLIC HEALTH

Degree Major: MPH
Department/Program: Health Science

PUBLIC LAW

Area of Interest or Specialization
Department/Program: Justice Studies
Political Science

PUBLIC POLICY

Area of Interest or Specialization
Department/Program: Economics/Political Science

PUBLIC RELATIONS

Minor
Degree Major: BS/Public Relations
Department/Program: Journalism and Mass Communication

PUPIL PERSONNEL SERVICES

Credential
Department/Program: Social Work

Q

QUALITY ASSURANCE

Graduate Option
Degree Major: MS/Quality Assurance
Department/Program: Department of Technology

R

RACE AND ETHNICITY

Area of Interest or Specialization
Department/Program: History

RADIO-TV JOURNALISM

Emphasis
Degree Major: BS/Journalism
Department/Program: Journalism and Mass Communication

RADIO-TELEVISION

Degree Major: BA/Radio-Television-Film
Department/Program: TV-Radio-Film-Theatre

RADIO-TELEVISION NEWS

Emphasis
Degree Major: BS/Journalism
Department/Program: Journalism and Mass Communication

RECORDS MANAGEMENT

Area of Interest or Specialization
Department/Program: Library and Information Science

RECREATION

Minor
Degree Major: BS/Recreation
Department/Program: Hospitality Recreation and Tourism Management

RELIGIOUS STUDIES

Minor
Degree Major: BA/Religious Studies
Department/Program: Comparative Religious Studies

REPORTING AND EDITING

Emphasis
Degree Major: BS/Journalism
Department/Program: Journalism and Mass Communication

RHETORICAL THEORY AND CRITICISM

Area of Interest or Specialization
Department/Program: Communication Studies

ROBOTICS

Area of Interest or Specialization
Department/Program: Electrical Engineering

ROTC (AIR FORCE)

Area of Interest or Specialization
Department/Program: Aerospace Studies

ROTC (ARMY)

Area of Interest or Specialization
Department/Program: Military Science

RUSSIAN

Minor
Department/Program: Foreign Languages

S

SCHOOL ADMINISTRATION AND SUPERVISION

Graduate Option
Degree Major: MA/Education
Department/Program: Educational Leadership

SCHOOL NURSING

Graduate Option
Degree Major: MS/Nursing
Department/Program: Nursing

SCIENCE EDUCATION

See Natural Science
Department/Program: Biological Sciences
Science Education

SCULPTURE

Area of Interest or Specialization
 Graduate Option
Degree Major: BA/BFA/MFA/Art
Department/Program: Art and Design

SEMICONDUCTOR AND POLYMAR PROCESSES

Area of Interest or Specialization
Degree Major: BS/MS/ Chemical Engineering
Department/Program: Chemical and Materials Engineering

SEVERELY HANDICAPPED

Graduate Option
Degree Major: MA/Education
Department/Program: Special Education

SINGLE SUBJECT CREDENTIAL

Credential program
Department/Program: Secondary Education

SOCIAL HISTORY

Area of Interest or Specialization
Department/Program: History

SOCIAL SCIENCES

Minor
 Credential program
Degree Major: BA/MA/Social Science
Department/Program: Social Sciences

SOCIAL SERVICES IN EDUCATIONAL SETTINGS

Area of Interest or Specialization
Degree Major: MSW
Department/Program: Social Work

SOCIAL WORK

Minor
Gerontology
 Certificate
Degree Major: BA/Social Work/MSW
Department/Program: Social Work

SOCIOLOGY

Minor
Degree Major: BA/MA/Sociology
Department/Program: Sociology

SOFTWARE AND INFORMATION ENGINEERING

Degree Major: BS/Software Engineering
Department/Program: Computer Science/Computer Engineering

SOIL

Area of Interest or Specialization
Biological Sciences

SOLAR ENERGY STUDIES

Area of Interest or Specialization
Department/Program: Environmental Studies

SPANISH

Minor
 Credential program
Degree Major: BA/MA/Spanish
Department/Program: Foreign Languages

SPANISH LANGUAGE COUNSELING

Certificate Program
Department/Program: Social Work

SPECIAL EDUCATION

Minor
 Credential Program
Degree Major: MA/Education
Department/Program: Special Education

SPEECH COMMUNICATION

Minor
 Credential Program
Degree Major: BA/MA/Speech Communication
Department/Program: Communication Studies

SPEECH PATHOLOGY

Graduate Option
 Minor
Degree Major: MA/Education
BA/Communication Disorders and Science
Department/Program: Communicative Disorders & Sciences

SPORTS MANAGEMENT Emphasis

Degree Major: BS/Kinesiology

Department/Program: Kinesiology

STATISTICS Emphasis

Degree Major: BA/Applied and Computational Mathematics

Department/Program: Mathematics

STUDIO PRACTICE Concentration

Degree Major: BA/Art

Department/Program: Art and Design

STRUCTURAL ENGINEERING Area of Interest or Specialization

Department/Program: Civil and Environmental Engineering

SYSTEMS

Degree Major: BS/MS ISE

Department/Program: Industrial and Systems Engineering

T**TAXATION** Graduate Option

Degree Major: MS/Taxation

Degree Major: MBA/Business Administration

Department/Program: College of Business

TEACHER EDUCATION Credential Program

Department/Program: Credential Programs

Elementary Education

Secondary Education

Teaching

TELEVISION JOURNALISM, RADIO Emphasis

Degree Major: BS/Journalism

Department/Program: Journalism and Mass Communication

TELEVISION RADIO

Degree Major: BA/Radio-TV-Film

Department/Program: TV-Radio-Film-Theatre

TERRORISM

Department/Program: Justice Studies

TESOL Certificate Program Concentration

Degree Major: MA/Linguistics

Department/Program: Linguistics and Language Development

THEATRE ARTS Concentration Minor

Degree Major: BA/MA/Theatre Arts

Department/Program: TV-Radio-Film-Theatre

THERAPEUTIC RECREATION Concentration

Degree Major: BS/MS/Recreation

Department/Program: Hospitality Recreation and Tourism Management

TOXICOLOGY

Department/Program: Biological Sciences

TRANSPORTATION ENGINEERING Area of Interest or Specialization

Department/Program: Civil and Environmental Engineering

TRANSPORTATION PLANNING MANAGEMENT Certificate Program

Department/Program: Urban and Regional Planning

U**UNITED STATES HISTORY** Minor

Department/Program: History

URBAN HISTORY Area of Interest or Specialization

Department/Program: History

URBAN PLANNING

Degree Major: MUP

Department/Program: Urban and Regional Planning

URBAN PLANNING MANAGEMENT Certificate Program

Department/Program: Urban and Regional Planning

URBAN STUDIES Minor

Department/Program: Urban and Regional Planning

URBAN STUDIES, ENVIRONMENTAL Area of Interest or Specialization

Department/Program: Environmental Studies

V**VALUES, TECHNOLOGY AND SOCIETY** Minor

Department/Program: Values Technology, and Society

VICTIMIZATION Area of Interest or Specialization

Department/Program: Justice Studies

VOICE Area of Interest or Specialization

Department/Program: Music and Dance

W**WATER RESOURCE MANAGEMENT** Area of Interest or Specialization

Department/Program: Environmental Studies

WATER RESOURCE ENGINEERING Area of Interest or Specialization

Department/Program: Civil and Environmental Engineering

WEAVING/TEXTILES Area of Interest or Specialization

Department/Program: Art and Design

WILDERNESS AND OPEN SPACE MANAGEMENT Area of Interest or SpecializationDepartment/Program: Environmental Studies
Biological Sciences**WILDLIFE RESOURCE MANAGEMENT** Area of Interest or Specialization

Department/Program: Biological Sciences

WOMEN'S HISTORY Area of Interest or Specialization

Department/Program: History

WOMEN'S STUDIES Area of Interest or Specialization Minor

Department/Program: Social Sciences

WORLD HISTORY Area of Interest or Specialization

Department/Program: History

WRITING, CAREER Concentration

Degree Major: BA/English

Department/Program: English

WRITING, CREATIVE Graduate Option Minor

Degree Major: MFA/Creative Writing

Department/Program: English

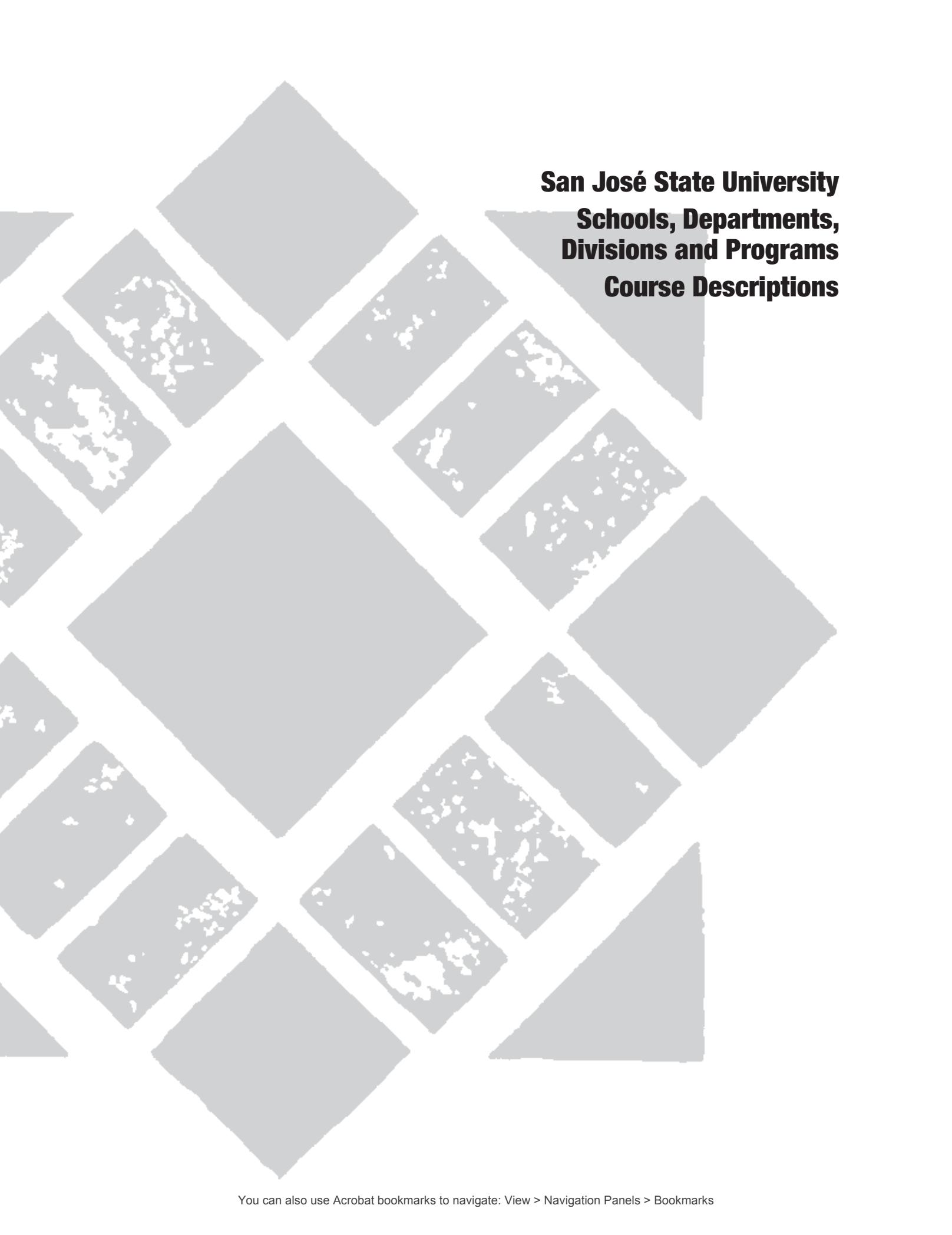
WRITING, PROFESSIONAL AND TECHNICAL Minor

Department/Program: English

Z**ZOOLOGY** Area of Interest or Specialization Emphasis

Degree Major: BS/Biological Science

Department/Program: Biological Sciences



San José State University
Schools, Departments,
Divisions and Programs
Course Descriptions

Aerospace Studies (Air Force ROTC)

College of Applied Sciences
and Arts

Industrial Studies 214
408-924-2960

Professors

Rick Moxley, Chair

Curricula

Minor, Aerospace Studies

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.

Scholarships based on merit are available to assist students with tuition, books and fees. Four-, three-, and two-year scholarships are available depending on when the student applies. Eligible students also receive a stipend of 200 per month during the school year. Contact the Air Force ROTC Unit Admissions Officer at 408-924-2960 for detailed information.

Our faculty brings 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.

Air Force ROTC offers several routes to an Air Force commission and is open to both undergraduate and graduate students. Among the alternatives available at San José State University are the Four-Year and Two-Year Programs. For the most current information on our program, visit our web site at www.sjsu.edu/depts/AFROTC/homepage.html.

Four-Year Program

The General Military Course (GMC) is the first half of the Four-Year Program. It is usually taken during the freshman and sophomore years. This program allows cadets to try out Air Force ROTC for up to two years without incurring any obligation unless on an Air Force ROTC scholarship. Anyone enrolled at San José State University can participate in the first two years (GMC) of the Air Force ROTC.

After completing the GMC, cadets attend four weeks of field training. Entry into the last half of the AFROTC program, the Professional Officer Course (POC), is competitive. These junior and senior level courses include instruction on leadership and management skills along with national security issues.

Two-Year Program

The Two-Year Program is for students who have not completed the GMC. Before entry into the POC, cadets must complete five weeks of field training at an Air Force base. This program is primarily available to community college transfer students, sophomores and others who, before entering the POC, have at least two years of academics remaining (undergraduate, graduate or a combination of the two).

Leadership Laboratory (LLAB)

LLAB represents the hands-on portion of the aerospace studies course. Cadets learn drill and ceremony as well as Air Force customs and courtesies. Occasionally, guest speakers present topics relating to the cadet and the Air Force. LLAB is the portion of ROTC that focuses on developing your leadership and followership skills.

As an Air Force ROTC cadet you will spend one LLAB period each week putting into practice the leadership skills and management theories acquired in class. As you progress through the program, you will receive more responsibility. Leadership Laboratory (LLAB) is cadet-centered to improve your ability to perform as an Air Force officer. This is a mandatory requirement and must fit into your academic plans.

Minor – Aerospace Studies

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.

Semester Units	AS 001A, AS 001B, AS 002A, AS 002B, AS 131A, AS 131B, AS 141A and AS 141B 12-16
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Total Units Required	12-16
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Courses**AEROSPACE STUDIES****LOWER DIVISION****AS 001A. The Foundation of the United States Air Force**

Introduces students to the Air Force and AFROTC with an overview of basic characteristics, missions, and organization of the Air Force; additional topics include officership and professionalism, career opportunities, military customs and courtesies, and an introduction to communications skills.

Year course. Enrollment in leadership lab required.
1 unit

AS 001B. The Foundation of the United States Air Force

Introduces students to the Air Force and AFROTC with an overview of basic characteristics, missions, and organization of the Air Force; additional topics include officership and professionalism, career opportunities, military customs and courtesies, and an introduction to communications skills.

Year course. Enrollment in leadership lab required.
1 unit

AS 002A. The Evolution of USAF Air and Space Power

Examines general aspects of air and space power through historical study and analysis and provides the student with a knowledge level understanding of the capabilities, function and doctrinal employment of aerospace forces; emphasizes development of oral and written communication skills.

Year course. Enrollment in leadership lab required.
1 unit

AS 002B. The Evolution of USAF Air and Space Power

Examines general aspects of air and space power through historical study and analysis and provides the student with a knowledge level understanding of the capabilities, function and doctrinal employment of aerospace forces; emphasizes development of oral and written communication skills.

Year course. Enrollment in leadership lab required.
1 unit

UPPER DIVISION**AS 131A. Air Force Leadership Studies**

Study of leadership, management fundamentals, professional knowledge, Air Force personnel system, ethics, and communication skills; develops application level knowledge of skills required of junior Air Force officer through case studies, practical exercises, and seminar discussion.

Prerequisite: AS 1A and AS 1B, AS 2A and AS 2B, or as determined by department chair.
Year course. Enrollment in Leadership lab required.
3 units

AS 131B. Air Force Leadership Studies

Study of leadership, management fundamentals, professional knowledge, Air Force personnel system, ethics, and communication skills; develops application level knowledge of skills required of junior Air Force officer through case studies, practical exercises, and seminar discussion.

Prerequisite: AS 1A and AS 1B, AS 2A and AS 2B, or as determined by department chair.
Year course. Enrollment in Leadership lab required.
3 units

AS 141A. National Security Affairs

Examines the national security process, international and regional relations, advanced leadership ethics, and Air Force doctrine with focus on the military as a profession, officership, military justice, civilian control of the military and current issues affecting military professionalism.

Pre/Corequisite: AS 131A.
Enrollment in leadership lab required.
3 units

AS 141B. Preparation for Active Duty

Studies the role of the Air Force officer in contemporary society with emphasis on knowledge, comprehension, and application of skills needed to facilitate a smooth transition from civilian to military life.

Pre/Corequisite: AS 131B.
Enrollment in leadership lab required.
3 units

AS 180. Individual Studies

Application of theory and instruction in field and staff exercises.

By arrangement.
Repeatable for credit
Credit / No Credit
0.5-3 units

Advertising**See Journalism and Mass Communications**

African Studies

College of Social Sciences

Business Tower 464
408-924-5568

Associate Professors

Cobie Kwasi Harris, Coordinator

Curricula

■ Minor, African Studies

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

Courses

AFRICAN STUDIES

UPPER DIVISION

AFRS 105A. History of Africa

See HIST 105A.

3 units

AFRS 105B. History of Africa

See HIST 105B.

3 units

AFRS 116. Modern African Societies

The interrelationship of geography, economics, politics and impact of independence upon selected African traditional societies.

Offered only occasionally.

3 units

AFRS 142. African Politics

See POLS 142.

3 units

AFRS 194. Colloquium in African Studies

Specialized problem areas in Africa. Topic varies each semester. Course is repeatable once for credit.

Offered only occasionally.

Repeatable for credit

3 units

African-American Studies

College of Social Sciences

Washington Square Hall 216
408-924-5871

Professors

Steven M. Millner, Chair

Associate Professors

Ruth P. Wilson

Curricula

- BA, African American Studies
- Minor, African American Studies

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
<i>Historical:</i> AFAM 002A and AFAM 002B (6); AFAM 040 or AFAM 111 (3).....	9
<i>Social-Behavioral:</i> AFAM 120 and AFAM 159	6
<i>Cultural:</i> 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 177, 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.

Courses

AFRICAN AMERICAN STUDIES

LOWER DIVISION

AFAM 002A. African-Americans and the Development of America's History and Government

Major events in America's development, emphasizing African-Americans' relationship to government and other basic institutions.

Entire sequence satisfies GE Areas F1, 2, 3.
3 units

AFAM 002B. African-Americans and the Development of America's History and Government

Major events in America's development, emphasizing African-Americans' relationship to government and other basic institutions.

Entire sequence satisfies GE Areas F1, 2, 3.
3 units

AFAM 022. The Humanities in African-American Culture

Analysis of several of the most important African-American creative art forms and personalities. Special attention to Black contributions in music, literature, cinema, photography and painting.

3 units

AFAM 025. The Changing Majority: Power and Ethnicity in America

See MAS 025.

GE: D2
3 units

AFAM 036. Black Theater Workshop

Survey of dramatic traditions that have involved African-Americans. Production activities are required that involve acting, dance and other forms of the creative arts.

Lecture 2 hours/activity 2 hours.
3 units

AFAM 040. African Origins

Ancient African civilizations to the advent of the slave trade. Folklore and mythology manifested in ceremonies, rituals and rhythmic movements are examined.

Repeatable for credit
3 units

UPPER DIVISION

AFAM 100W. Writing Workshop

Development of advanced writing skills through study of principal techniques of communication in the Black community related to Black music, literature and politics.

Prerequisite: Completion of core GE, ENGL 1B (with a grade of "C" or better), satisfaction of Writing Skills Test and upper division standing.
ABC/No Credit

GE: Z
3 units

AFAM 102. African-American Music

Analysis of styles and techniques of major traditions in Black music. Development of music from slave work-a-day songs to rhythm and blues and modern jazz, 1950's to the present.

Prerequisite: Upper division standing or instructor consent.
3 units

AFAM 105. Health Issues in the African-American Community

A review of the health status of African-Americans within the context of U.S. health care delivery system. Major disease health trends are discussed as by-products of the interaction of biological, cultural, economic and social forces in the U.S.

Prerequisite: Upper division standing or instructor consent.

3 units

AFAM 106. Race and Ethnic Relations in the African Diaspora

This course examines the role of race and ethnicity amongst persons of African descent and non-Negroids, i.e., it examines the role race and ethnicity plays in primary and secondary relationships amongst Negroids and between Negroids and non-Negroids.

Prerequisite: Upper division standing or instructor consent.

3 units

AFAM 108. Terrorism, Religion, Ethnicity, and Racial Extremism in the African and Melanesian Diasporas

This course examines the role of religion, ethnicity, and race in the manifestation of political violence. Special attention is focused on terrorist and guerrilla violence by and against Negroids, Melanesians, and other non-Whites.

Prerequisite: Upper division standing or instructor consent.

3 units

AFAM 109. Racial, Ethnic, Religious Extremism and Human Rights Law

This discussion-based course examines racial, ethnic, and religious extremism, international law, human rights law, and humanitarian law, "Africa, the African and Melanesian Diasporas, and the non-White developing world" will be the focus of the course.

Prerequisite: Upper division standing or instructor consent.

3 units

AFAM 110. Education of the Black Child

Analysis of economic, sociocultural and educational issues that affect Black students. Emphasis directed at elementary and secondary school systems.

Prerequisite: Upper division standing or instructor consent.

3 units

AFAM 111. African Nations

Analysis of African societies over time, beginning with the Africa of ancient civilizations, followed by Africa under European colonialism, and concluding with the sweeping changes in contemporary Africa.

Prerequisite: Upper division standing or instructor consent.

3 units

AFAM 112. New Faces in the African-American Community

An overview of Black immigrants in the United States from 1970-2003.

Prerequisite: Upper division standing or instructor consent.

3 units

AFAM 115. The Black Community Past and Present

Analysis of historical development of African-Americans including migrational trends of Blacks from the rural South to urban North. Search for alternatives in new institutions and modification of old ones.

Prerequisite: Upper division standing or instructor consent.

3 units

AFAM 119. Africana Philosophy and Culture

See PHIL 119.

3 units

AFAM 120. Sociological Analysis of African-American Communities

Sociological analysis of the African-American community traces development of the community from its historical inception to contemporary urban settings. Analyzes important trends, shifting values, institutional development and urban problems.

Prerequisite: Upper division standing or instructor consent.

3 units

AFAM 125. The Black Family

Sociological analysis of Black family from its African roots to twentieth century types. Influence of the American experience and the African-American marriage practices, family role relationships and socialization of children.

Prerequisite: Upper division standing or instructor consent.

3 units

AFAM 130. Psychology of the Black Community

Impact of Black society and culture on personality growth in light of current sociological and social-psychological studies. Social interaction, group membership within the Black community and its influence on the shaping of behavior.

Prerequisite: Upper division standing or instructor consent.

3 units

AFAM 133. Introduction to Social Planning

See URPB 133.

3 units

AFAM 134. Martin L. King and the Civil Rights Movement

Origins and development of Civil Rights movement from 1865 to present. Analysis of role of Martin L. King, Jr. in the Civil Rights movement in the South and of federal government response and struggle of African-Americans for civil and political equality.

Prerequisite: Completion of U.S. History graduation requirement.

3 units

AFAM 137. Religion in the Black Community

Analysis of formation and development of African-American religious ideas and institutions (i.e., Christianity, Islam, Judaism) in the Black community and their effect on the African American personality.

3 units

AFAM 142. Race, Ethnicity, and the Law

Analysis of the politics of law and race in the U.S. with a focus on the experience of African-Americans and other racial and ethnic minorities as offenders, victims and as citizens engaged in a continuing movement for equality and an end to injustice.

Prerequisite: Upper division standing or instructor consent.

3 units

AFAM 143. Politics of Poverty and Welfare in African-American Communities

Poverty in the United States is examined, particularly as it relates to the African-American community. Analyzes role of government and the effects of structural factors on the socio-economic well-being of African Americans.

Prerequisite: Upper division standing or instructor consent.

3 units

AFAM 145. Urban Policy and Its Impact on Inner City Residents

See URPB 145.

3 units

AFAM 150. West African Drumming and Culture

A study of the instrumental music, song, and dance of the African Diaspora with an emphasis on its cultural context.

Prerequisite: Upper division standing.

3 units

AFAM 151. Race, Poverty and the Environment

Analysis of the relationship between the environmental crisis and people of color and poor communities in the U.S., emphasizing the interplay among race/ethnicity, class and politics in the struggle for environmental justice and survival by communities of color and poor people.

3 units

AFAM 152. The Black Woman

Understanding historical and cultural factors influencing the Black woman such as slavery, racism and poverty; learning the contributions and strengths Black families provide to and for their families and culture.

Prerequisite: Upper division standing or instructor consent.

3 units

AFAM 154. History of Black Images in U.S. Popular Culture

Examines African-American cultural traditions from 1865 to 1930 in the United States.

Prerequisite: Upper division standing or instructor consent.

3 units

AFAM 155. The Triumph and Tragedy of Black Athletes in U.S. History

This course examines the significance and impact of Black athletes on popular culture, race relations and U.S. society.

Prerequisite: Upper division standing or instructor consent.

3 units

AFAM 156. Black Women Writers: Race, Culture and Life Cycle in Cross-Cultural Perspective

Comparative analysis of the meaning and developmental stages of womanhood for women of African ancestry as depicted in the fiction of women of African ancestry. Emphasis on the role of race and culture in shaping contemporary conceptions of womanhood among Black women.

Prerequisite: Upper division standing or instructor consent.

3 units

AFAM 158. African-Caribbean Dance

This dance and discussion class includes instruction in dancing to the popular Caribbean basin rhythms and melodies, salsa, rumba, plena, merengue, cumbia, mambo, guaracha, guarache, guaguancó and son, and discussion of the Orisha tradition, which inspired them.

2 units

AFAM 159. Economic Issues in the Black Community

Analysis of continuing racial economic disadvantage in context of corporate and public policies. Exploration of new economic development and career opportunities emerging from changed environmental protection priorities.

Prerequisite: Upper division standing or instructor consent.
3 units

AFAM 160. Blacks in U.S. Politics and Society

Examines the lives and major contributions of African-Americans to politics and U.S. society.

Prerequisite: Upper division standing.
3 units

AFAM 161. Black Images in American Film, TV and the Print Media

Course examines the representation of Black people in film, TV, and print media.

Prerequisite: Upper division standing.
3 units

AFAM 164. Survey of Black Business Organizations

Private sector businesses from the perspective of racial ownership and consumption patterns. Historical development, future trends, consumer market, government regulations and funding support as they impact the success of Black business.

Prerequisite: Upper division standing.
3 units

AFAM 165. Topics in Ethnic American Literature

See ENGL 165.

Repeatable for credit
3 units

AFAM 166. African-American Women in History

Role of African American women in shaping U.S. history through a shared afrocentric gender legacy of activism and public life guardianship. Resulting impacts on abolition, lynching deterrence, labor unions, civil rights and professional activities.

Prerequisite: Upper division standing.
3 units

AFAM 177. Humor in the African-American Community

Analysis of humor as an integral part of survival, coping and individual expression of African-Americans. Focus on social context in which various types of humor evolved. Identification of themes and specific forms or types of humor investigated.

Prerequisite: Upper division standing or instructor consent.
3 units

AFAM 180. Individual Studies

Individual research project and field activity on phase or topic not covered in regular course offerings.

Prerequisite: Upper division standing.
Repeatable for credit
Credit / No Credit
1-4 units

AFAM 184. Directed Reading

Limited to qualified upper division students.

Repeatable for credit
Credit / No Credit
1-4 units

AFAM 190. Internship in Community Development

Supervised placement in practical situations where community workers are employed: community planning, correctional services, community development agencies, etc.

Prerequisite: Upper division standing or instructor consent.
Credit / No Credit
1-4 units

AFAM 194. Peoples of Color in the Making of the Americas: 1400-1850

See AAS 194.

3 units

AFAM 195. Peoples of Color in the Making of the Americas: 1850-Present

See AAS 195.

3 units

AFAM 198. Senior Seminar in African-American Studies

Major themes and topics in the African-American experience analyzed through readings, reports and discussions. Topics and materials vary each semester. Course is repeatable for 6 unit maximum.

Prerequisite: AFAM 2A, AFAM 2B and senior standing.
Repeatable for credit
3 units

GRADUATE**AFAM 200. Colloquium in African Origins**

Analysis of historical writings of pre-colonial and colonial West Africa as a relevant background tool to the history of Black people in the U.S. Discussions based on assumption that assignments have been read in advance.

Prerequisite: Upper division or graduate standing.
3 units

AFAM 210. Seminar in African-American History

Detailed study and survey of the dispersal of African peoples from Africa to the United States and to other parts of the Americas.

Repeatable for credit
3 units

AFAM 220. Socio-Psychological Development of Black Community

Analysis of various aspects of socio-psychological development in the Black community. Particular emphasis on socialization and social perception, ghettoization (causes and consequences), prejudice, stress and inter-group relations.

3 units

AFAM 240. Seminar in Black Politics and Urban Problems

Analysis of the development of Black political power in selected urban areas, with an emphasis on its relationship to the general urban crisis. Special study of the ramifications of Black political development on the county, state and federal governmental levels with specific reference to congressional actions and judicial decisions.

3 units

AFAM 298. Special Studies

Advanced individual research and projects related to the Black community.

Prerequisite: Consent of graduate advisor.
Repeatable for credit
Credit / No Credit
1-6 units

American Studies

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

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	15
AMS 001A, AMS 001B, AMS 169, AMS 179 and AMS 190	
Plan B	15
AMS 159, AMS 160, AMS 169, AMS 179 and HUM 190	
Total Units Required	15

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.

Courses

AMERICAN STUDIES

LOWER DIVISION

AMS 001A. American Civilization

American culture examined through political, literary, artistic, economic and social development. American values, ideas and institutions from popular culture as well as traditional sources.

Note: Entire sequence satisfies GE Areas C1,2; D2,3; F1,2,3.

GE: M4
6 units

AMS 001B. American Civilization

American culture examined through political, literary, artistic, economic and social development. American values, ideas and institutions from popular culture as well as traditional sources.

Prerequisite: AMS 1A.

Note: Entire sequence satisfies GE Areas C1,2; D2,3; F1,2,3.

GE: M5
6 units

UPPER DIVISION

AMS 100W. Writing in the Humanities

See HUM 100W.

ABC/No Credit
GE: Z
3 units

AMS 159. Nature and World Cultures

The influence of industrialization and globalization on earth and the environment as seen through culture.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: V
3 units

AMS 160. Contemporary Issues

See HUM 160.

Repeatable for credit
3 units

AMS 169. The American Dream

The American search for identity and meaning, the struggle for equality and success, in relation to myths, illusions and realities reflected in history, literature and the arts.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: S
3 units

AMS 179. American Popular Culture

Music, sports, fashion, popular literature, television and other arts and activities that are main forms of influence, entertainment and escape. Expressions of American attitudes and ideas as important influences upon evolving culture and consciousness.

Prerequisite: Upper division standing.
3 units

AMS 180. Individual Studies

Supervised study of a particular aspect of American culture not covered in a regular course offering.

Prerequisite: Instructor consent.
Repeatable for credit
Credit / No Credit
1-4 units

AMS 190. Senior Seminar in Humanities

See HUM 190.

3 units

Anthropology

College of Social Sciences

Clark Hall 469

Anthropology: 408-924-5710

Behavioral Science: 408-924-5340

Professors

Chuck Darrah, Chair

Jan English-Lueck

Carol Chapnick Mukhopadhyay

William J. Reckmeyer

Associate Professors

Roberto Gonzalez

Assistant Professors

Mark McCoy

Marco Meniketti

Guadalupe Salazar

Elizabeth Weiss

Curricula

■ BA, Anthropology

■ BA, Behavioral Science,
Double Major in Anthropology

■ Minor, Anthropology

■ Minor, Native American Studies

■ MA, Applied Anthropology

BA – Anthropology

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 predominately 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
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	3
SOCS 015, SOCI 015, SOCI 102, STAT 095 or GEOG 101	
Requirements in the Major	42
Core	15
ANTH 011, ANTH 012, ANTH 013, ANTH 131 and ANTH 191	
Research Methods	3
ANTH 149, ANTH 155, ANTH 167, ANTH 168 or ANTH 191	
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 175, ANTH 176, ANTH 177, ANTH 178, ANTH 179	
Archaeology	6
Complete six units from: 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 152, ANTH 153, ANTH 154, ANTH 155, ANTH 156, ANTH 157	
Anthropology Electives	6
All current upper-division anthropology courses. ANTH 180, 184, 187, and 195 as appropriate and with approval of advisor.	
Electives	31
Total Units Required	120

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, Double Major in Anthropology

See under Behavioral Science section of the SJSU Catalog.

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.

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 sent 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 www.sjsu.edu/depts/anthropology.

Requirement for Admission to Candidacy

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 Studies and Research website at www.sjsu.edu/gradstudies. 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

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. Fifteen of the units are in the Applied Anthropology Core and 3 units of quantitative methods. 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	18
ANTH 230, ANTH 231, ANTH 232, ANTH 233 and ANTH 234 (15); ANTH 235 or SCWK 242 (3); GEOG 195 or GEOG 279 (3); SOCI 200B or HS 267 (3)	
Anthropology Depth Requirement	6
Two 3-unit upper division anthropology courses approved by faculty advisors	
Field of Application Requirement	6
Two 3-unit upper division SJSU courses approved by faculty advisors	
Thesis or Project Requirement	6
ANTH 280; ANTH 298 or ANTH 299	
Total Units Required	36

Courses**ANTHROPOLOGY****LOWER DIVISION****ANTH 011. Cultural Anthropology**

Basic concepts, theories and methods used in the comparative study of socio-cultural systems. Includes cultural ecology and change; political, economic and kinship systems; language, art and religion; cultural perspectives on contemporary issues.

CAN ANTH 4
GE: D1
3 units

ANTH 012. Introduction to Human Evolution

The human organism from an evolutionary perspective. The foundations of life and evolutionary theory. Introduction to primate behavior and the fossil record. Human biocultural evolution over the last sixty million years.

CAN ANTH 2
GE: B2
3 units

ANTH 013. Archaeology

How archaeologists invent their own version of the past, illustrated with compelling Old and New World discoveries from early prehistory to the present. How archaeological sites are discovered, excavated and analyzed; how facts are tested and fictions unmasked.

3 units

ANTH 025. Human Lifecourse in Context

Human development and its physiological, psychological and sociocultural contexts. Cross-cultural perspectives on infancy, childhood, adolescence, adulthood and old age. The role of university education in the life span.

GE: E
3 units

UPPER DIVISION**ANTH 100W. Writing Workshop**

Practice in improvement of writing skills appropriate to the fields of anthropology and behavioral science. Includes essays, reports and scholarly communication.

Prerequisite: Completion of core GE, ENGL 1B (with a grade of C or better), satisfaction of Writing Skills Test and upper division standing.

ABC/No Credit
GE: Z
3 units

ANTH 102. Silicon Valley Connections

Examines issues of cultural diversity, work and family, technology in daily life, attachment to organizations, and community building in Silicon Valley through an anthropological perspective. Connections with other global regions are explored. Public policy implications are developed and analyzed.

Prerequisite: Upper division standing.
3 units

ANTH 105. Applied Anthropology

Use of anthropological knowledge in problem solving and policy making. Survey of applied anthropology, models of applying anthropology and affecting policy making and the use of anthropology by non-professionals in diverse careers.

Prerequisite: ANTH 11 or instructor consent.
3 units

ANTH 108. Medical Anthropology

A comprehensive examination of culture, sickness and healing in a cross-cultural perspective, emphasizing ecological/evolutionary bases of disease and healing and cultural dimensions of health in modern world.

Prerequisite: ANTH 11 or instructor consent.
3 units

ANTH 114. Legacy of Asia

See HUM 114.

GE: V
3 units

ANTH 115. The Emerging Global Culture

Introduction to systems concepts and approach as a way to investigate the global impacts of industrial technology on political, economic, social and moral/psychological structures of humankind.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

Recommended for behavioral science majors.
GE: V
3 units

ANTH 117. Human Ecology

See ENVS 117.

3 units

ANTH 122. Magic, Science and Religion

See RELS 122.

GE: V
3 units

ANTH 125. Urban Anthropology

Anthropological theories and methods in analyzing the global effects of urban growth. Relevance of anthropological approach in understanding our local multiethnic metropolitan area.

Prerequisite: ANTH 11 or instructor consent.
3 units

ANTH 126. Introduction to Urban Form in the Third World

See URBP 126.

3 units

ANTH 127. Urban Native American Issues

See URBP 127.

Repeatable for credit
3 units

ANTH 130. Kin, Kith, and Community: The Anthropology of Social Organization

Overview of social organization focused on local forms of human relationships: kinship, non-kin relations such as friendship and networking, and community. Explores the principles of kinship and community-building. Examples will be drawn from small-scale, complex and international societies.

Prerequisite: Upper division standing.
3 units

ANTH 131. Theories of Culture

Seminar on evolutionary, functional and structural theories of culture. Analysis of contemporary theory and development of the discipline of anthropology.

Prerequisite: ANTH 11 or instructor consent.
3 units

ANTH 132. Creating Built Worlds

Cross-cultural exploration of material expressions of culture. Analysis of production and consumption of places, shelters, and goods. Implications for design and policy.

Prerequisite: Upper division standing.
3 units

ANTH 133. Organizational Cultures

Complex organizations as dynamic sociocultural systems. Topics include organizational culture, cross-cultural study of organizations, organizational ethnography, cultural diversity, organizational learning and relevance of a cultural approach to enhance organizational effectiveness in a rapidly-changing world.

Prerequisite: ANTH 11 or instructor consent.
Repeatable for credit
3 units

ANTH 134. Systemic Leadership

Examination of systemic leadership thought and practice, especially its application to helping resolve complex problematic issues more effectively and responsibly. Focus is on leading collaborative change efforts with diverse sets of stakeholders in group, organizational, community, cultural, and global settings.

Prerequisite: Upper division standing.
3 units

ANTH 135. Behavioral Systems

Introduction to systems concepts and approaches as a way of analyzing psyche, family, community, culture and global ecosystems in a holistic, integrative and interdisciplinary way.

Prerequisite: Upper division standing.
Recommended for behavioral science majors.
3 units

ANTH 136. Thought Control in Contemporary Society

Anthropological analysis of sociocultural controls influencing and regulating human thought and behavior in the contemporary period. Topics include propaganda, censorship, undue influence, coercive persuasion and "brainwashing," groupthink, messianic cults, totalitarianism, technologies of control, ritualized rebellion, resistance movements, and democratic alternatives.

Prerequisite: Upper division standing.
Repeatable for credit
3 units

ANTH 137. California in Historical and Social Scientific Perspectives

See SOCS 137.
3 units

ANTH 138. United States in Historical and Social Science Perspectives

See SOCS 138.
GE: S
3 units

ANTH 139. The World in Historical and Social Science Perspectives

See SOCS 139.
Repeatable for credit
GE: V
3 units

ANTH 140. Human Sexuality

Biological and sociocultural facets of human sexuality. Evolution and physiology of sex, reproductive biology/ethics and cross-cultural expression of sexual behavior.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: S
3 units

ANTH 141. Culture and Gender

Cross-cultural, anthropological perspective on how different cultures organize and give meaning to the "biological facts" of being male and female. Explores gender relations in small-scale and complex non-Western cultures as well as in contemporary American society.

Prerequisite: ANTH 11, ANTH 25, ANTH 140 or instructor consent.

3 units

ANTH 142. Culture in Mind

Exploration of self, identity and behavior in cultural context. Cognition, socialization, cross-cultural mental health issues and comparison of intercultural communication modes.

Prerequisite: ANTH 11, ANTH 25 or instructor consent.

3 units

ANTH 143. Culture and Adaptation

Explores the relationship between adaptive human behavior and the environment. Theories of interaction between biology, environment and culture are illustrated by examples of mobile foraging peoples, village sedentary farmers, complex chiefdoms and state-level societies.

Prerequisite: Upper division standing.

3 units

ANTH 144. Gifts, Markets and Money

Anthropological analysis of exchange systems including gift economies, redistribution, and markets. Ethnographic materials to cover economic anthropology, modes of production, feasting, the history of money, the global market system, "globalization" ideology, the rise of corporations, illicit markets, and alternative economies.

Prerequisite: Upper division standing.

3 units

ANTH 145. Middle Eastern Traditions

See RELS 145.

GE: V

3 units

ANTH 146. Culture and Conflict

Problems of change, especially in multiethnic societies of both established and emerging nations. Technological development, modernization, social changes and value conflicts.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: V

3 units

ANTH 148. Religion and Anthropology

Comparative anthropological study of religious systems and world views; Anthropological theories concerning origin and evolution of religion; structure and function of ritual and myth; types of religious specialists.

Prerequisite: ANTH 11, ANTH 25 or instructor consent.

3 units

ANTH 149. Ethnographic Methods

Qualitative methods: research design, participant observation, collection of life histories, ethical responsibilities, interviewing, analysis and ethnographic writing.

Prerequisite: ANTH 11 or instructor consent.

3 units

ANTH 152. Human Origins

Fossil evidence for human evolution, emphasizing areas of greatest controversy. Lab demonstration of modern skeletal material and reproductions of fossil hominids supplement lecture.

Prerequisite: ANTH 12 or instructor consent.

3 units

ANTH 153. Human Variation and Behavior

Human variation and behavior is the study of the nature and extent of heritable biological and behavioral differences among human populations in an evolutionary perspective. Data drawn from non-human primates, medical fields, the fossil record and genetics will be reviewed. The role of genetics and environment in the formation of these differences is considered.

Prerequisite: Any lower division anthropology or psychology course or instructor consent.

3 units

ANTH 154. Monkeys, Apes and Humans

Behavior, ecology and evolution of our closest animal relatives, the nonhuman primates. Interpretive emphasis toward broader understanding of human evolution and behavior.

Prerequisite: Any lower division anthropology or psychology course or instructor consent.

3 units

ANTH 155. Human Osteology

The human skeletal system as an anatomical structure and biomechanical system. Lab experience in identification of osteological material and recognition of diseases associated with bone.

Prerequisite: ANTH 12 or instructor consent.

Lecture 3 hrs/lab 2 hrs.

4 units

ANTH 156. Bioarchaeology

Study of human skeletal remains from archaeological setting to aid in reconstructing the biological and cultural past. Current theoretical and methodological issues in bioarchaeology. Emphasis on potential of skeletal analysis for uncovering disease and trauma, subsistence patterns, biological relatedness, physical activity and diverse reactions to stressors.

Prerequisite: Upper division standing.

3 units

ANTH 157. Forensic Anthropology

An overview of forensic anthropological methods and applications emphasizing the recovery and interpretation of human remains within the context of multidisciplinary scientific death investigation. Topics include the history of the discipline and a concentrated hands-on overview of basic human osteological identification.

Prerequisite: ANTH 12, BIOL 10, BIOL 21, or BIOL 65.

3 units

ANTH 160. Reconstructing Lost Civilizations

Explores scientific archaeology and the reconstruction of civilizations. Topics include framing hypotheses, site selection, excavation, analysis of artifacts and ecofacts, and reconstructing social systems.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: R

3 units

ANTH 161. Old World Civilizations

Prehistoric cultural development in Europe, Asia, and Africa from the Paleolithic to the development of civilizations. Discussions of early states include social organization, economic systems, art, architecture and intellectual achievements.

Prerequisite: Upper division standing.

3 units

ANTH 162. Inca, Aztec and Maya Civilization

Ancient high civilizations of Mexico, Central America and Andean South America, their predecessors and contemporaries. Explores sociocultural systems with emphasis on art, architecture and intellectual achievements.

Prerequisite: Upper division standing.

3 units

ANTH 163. Coastal and Island Societies

Archaeology of coastal and island peoples. Explores the unique opportunities and constraints coastal and island environments have presented to human societies. Case studies drawn from the Pacific, Atlantic, Caribbean, and the Mediterranean.

Prerequisite: Upper division standing.

3 units

ANTH 164. Prehistory of North America

Archaeology and prehistory of North American cultures. Prehistoric culture areas and relationships between them; development of complex societies; and relationships to historic societies.

Prerequisite: Upper division standing.

3 units

ANTH 165. Historical Archaeology

Course centers on the archaeology of the recent past. Students explore how to employ archaeological material analysis and archival research to develop a fuller understanding of the development of the modern industrialized world.

Prerequisite: Upper division standing.

3 units

ANTH 166. Chiefdoms, States, & Empires

An archaeological perspective on the roots of economic inequality, social hierarchies, and oppressive political regimes. Case studies center on the evolution of the world's first stratified societies: chiefdoms, early states, and pre-industrial empires.

Prerequisite: Upper division standing

3 units

ANTH 167. Archaeological Laboratory Methods

General laboratory procedures in archaeological research. Collection, processing, and curation of artifacts.

Prerequisite: ANTH 13.

3 units

ANTH 168. Archaeological Methodology

Central methods of archaeological practice. Methods of archaeological inquiry, research design, and the cultural resource management presented through case studies in historic and prehistoric archaeology.

Prerequisite: ANTH 13.

3 units

ANTH 169. Archaeological Site Excavation

Artifact recovery and analysis during archaeological field project. All phases of professional archaeological practice leading to publication of findings. Sites may be local or distant.

Prerequisite: ANTH 13 or instructor consent.

Repeatable for credit

3 units

ANTH 170. Language and Culture

Surveys anthropological, cross-cultural approaches to language including: its evolution, structure, function and change over time; its relationship to culture (worldview, perception, behavior); language in social interaction and social settings; and contemporary language diversity issues.

Prerequisite: ANTH 11 or instructor consent.
3 units

ANTH 173. Culture Through Film

Survey of indigenous cultures represented in film. Critical evaluation of the role of films in describing and interpreting these cultures.

Prerequisite: ANTH 11, ANTH 25 or instructor consent.
3 units

ANTH 175. Anthropology of Native America

Survey of indigenous peoples of the Pacific Rim from ethnohistorical times to the present. Cultural adaptation, social organization, world view, intercultural contact and cultural portrayal. Emphasis on Western Native North America with examples drawn from other Asian, Pacific and American indigenous cultures.

Prerequisite: Any lower division anthropology course or instructor consent.
3 units

ANTH 176. Indians of California

Native Californian cultures as they functioned before white contact, emphasizing ecological, sociopolitical and religious interrelationships and historic culture change. Ethnographic, archaeological and documentary sources.

Prerequisite: ANTH 11 or instructor consent.
3 units

ANTH 177. Anthropology of Asia

Sociocultural themes of selected Asia cultures. Covers cultural pluralism, intercultural contact, social organization, worldview and economic adaptations. Explores connections within the Pacific Rim, especially to the local region. Course is repeatable once for credit when different cultures are emphasized.

Prerequisite: Upper division standing.
Repeatable for credit
3 units

ANTH 178. Anthropology of Latin America

Sociocultural themes of selected Latin American cultures. Covers cultural pluralism, intercultural contact, social organization, worldview and economic adaptations. Explores connections within the Pacific Rim, especially to the local region.

3 units

ANTH 179. Anthropology of Mexico

Sociocultural themes of selected Latin American cultures. Covers cultural pluralism, intercultural contact, social organization, worldview and economic adaptations. Explores connections within the Pacific Rim, especially to the local region.

3 units

ANTH 180. Individual Studies

Prerequisite: Instructor consent.
Repeatable for credit
Credit / No Credit
1-4 units

ANTH 182. Ethnicity and Aging

See AAS 182.

3 units

ANTH 184. Directed Reading

Directed reading in cultural anthropology, physical anthropology or archaeology to gain a broader understanding of a particular topic, culture or theoretical issue.

Prerequisite: Upper division standing and instructor consent.
Repeatable for credit
Credit / No Credit
1-4 units

ANTH 187. Special Topics

Contemporary issues in anthropological theory including cultural anthropology, archaeology and physical anthropology. Course is repeatable once for credit on different issue.

Prerequisite: Upper division standing.
Repeatable for credit
3 units

ANTH 191. Frontiers of Anthropology

Critical contemporary social issues that cut across archaeology and cultural and physical anthropology. Anthropology as a holistic social science. Seminar format uses reading, simulations and class discussions. Professionalism in the discipline stressed.

Prerequisite: ANTH 131 and senior standing or instructor consent.
3 units

ANTH 193. Behavioral Science in Practice

Capstone workshop for behavioral science majors. Students assess methods and knowledge of anthropology, psychology and sociology, and synthesize them by reflecting upon case studies of individual, organizational, community, and global issues. Emphasis is on cooperative learning, reflection and synthesis of skills and knowledge.

Prerequisite: Senior standing, declared major in Behavioral Science or Behavioral Science double major.
1 unit

ANTH 195. Anthropology Practicum

Advanced practicum in archaeology, ethnography, physical anthropology or linguistics.

Prerequisite: Instructor consent.
Repeatable for credit
Credit / No Credit
1-6 units

ANTH 198. Special Projects

Independent research in cultural anthropology, physical anthropology or archaeology.

Prerequisite: Upper division standing and instructor consent.
Repeatable for credit
Credit / No Credit
1-4 units

GRADUATE**ANTH 230. Theory in Practice**

In-depth analysis of anthropological and related theory and accompanying methodology, emphasizing the use of theory in practice.

Prerequisite: ANTH 131 or instructor consent.
3 units

ANTH 231. Applications Core

Methods for the analysis sociocultural systems, ethnographic evaluation, and program/design development. Emphasis on professionalism, project management, budgeting, ethics, and contracts.

Prerequisite: ANTH 232, ANTH 105 or instructor consent.
3 units

ANTH 232. Applications Core

Methods for the analysis sociocultural systems, ethnographic evaluation, and program/design development. Emphasis on professionalism, project management, budgeting, ethics, and contracts

Prerequisite: ANTH 231 or instructor consent.
3 units

ANTH 233. Fields of Application

Survey of domains in which anthropological skills and knowledge are applied. Topics include health, business and industry, sustainable regions, and immigration. Emphasis is on opportunities for anthropological contributions.

Corequisite: ANTH 231 or instructor consent.
3 units

ANTH 234. Advanced Research Methods

Advanced research methods including individual and group interviewing, structured observation, and formal analytical methods. Emphasis on data management, ethnographic writing, and presentation of data through different media.

Prerequisite: ANTH 149 or equivalent.
3 units

ANTH 235. Quantitative Methods

Advanced quantitative methods to gain comprehension of statistical analyses, especially in regards to predictive value for regional issues. Emphasis will be on understanding statistics, creating databases, using statistical software packages, and employing proper statistics.

Prerequisite: STAT 95 or equivalent.
3 units

ANTH 273. Systems Approach to Community Health Problems and Program Design

See HS 273.

Repeatable for credit
3 units

ANTH 280. Individual Studies

Advanced individual research and projects.

Prerequisite: Instructor consent and department chair approval.
Repeatable for credit
Credit / No Credit
1-4 units

ANTH 287. Special Topics

Contemporary issues in applied and practicing anthropology not covered in other courses. Course is repeatable once for credit on different topic with advisor consent.

Prerequisite: Graduate standing or instructor consent.
Repeatable for credit when topic changes.
Repeatable for credit
1-3 units

ANTH 297. Social Science Theory

See SOCS 297.

3 units

ANTH 298. Anthropology Project

Course consists of supervised units applying anthropology in a project, the documentation of that project and the evaluation of the project in a written report. Course is repeatable for credit in the same semester.

Repeatable for credit
Credit / No Credit
1-6 units

ANTH 299. Master's Thesis

Independent anthropological research conducted under supervision of faculty advisor.

Prerequisite: Graduate standing.
Repeatable for credit
Credit/No Credit/Report in Progress
1-6 units

Applied Sciences and Arts – Interdisciplinary Courses

College of Applied Sciences
and Arts

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

Courses

APPLIED SCIENCES

LOWER DIVISION

APSC 063. New Media

Hands on instruction in multimedia and emerging new media technologies. Print and web page design, blogging, podcasting, videocasting, RSS and creation of multimedia presentations by combining still photos, graphics, and video with music and/or audio.

3 units

UPPER DIVISION

APSC 101. Computer Applications for Professionals

Computer applications for storage, editing, communication, managing, composition and processing of information. Focus on providing information and experience in using standard software packages for word processing, data management, graphics and statistics in educational and professional applications.

Prerequisite: Upper division standing.

Lecture 2 hours/lab 2 hours

3 units

APSC 157. Community Action/ Community Service

See EDUC 157.

Repeatable for credit

GE: S

3 units

GRADUATE

APSC 201. Computer Software for Research

Enhancement of ability to conduct research and carry out statistical analyses of data through the use of appropriate software.

Prerequisite: Research methods, intermediate statistics or instructor consent.

3 units

Art and Design

College of Humanities and the Arts

School:
Art Building 116
408-924-4320

Design and Animation/Illustration:
Art Building 121
408-924-4343

Fine Art and Art History and Visual Culture:
Art Building 123
408-924-4340

Graduate:
Art Building 121
408-924-4346

Animation & Illustration

Professors

Alice A. Carter
Courtney Granner

Assistant Professors

John Clapp

Art History and Visual Culture Program

Professors

Arthur Kao
Anne Simonson

Assistant Professors

Dore Bowen
Beverly Grindstaff

Design Program

Professors

Brian Kimura
Lanning Stern

Associate Professors

Chang Sik Kim
John McClusky
Tomasz K. Migurski
Diana Seah
Randall Sexton

Fine Art Studio Program

Professors

Robert M. Chiarito
Reed Estabrook
M. Rupert Garcia
Robin Lasser
David Middlebrook
Leroy Parker
Joel Slayton
Patrick Surgalski
Brian Taylor
Consuelo Underwood
Linda R. Walsh
Stanton Welsh

Associate Professors

Gale Antokal
Jo Farb Hernandez

Assistant Professors

Valerie Mendoza
Shannon Wright

Curricula

- BA, Art, Concentration in Art History and Visual Culture
- BA, Art, Concentration in Design Studies
- BA, Art, Concentration in Studio Practice
- BA, Art, Concentration in Studio Practice, Preparation for Teaching
- BFA, Art, Concentration in Animation/Illustration
- BFA, Art, Concentration in Digital Media Art
- BFA, Art, Concentration in Photography
- BFA, Art, Concentration in Pictorial Art
- BFA, Art, Concentration in Spatial Art
- BFA, Graphic Design
- BS, Industrial Design
- BFA, Interior Design
- Minor, Art Education
- Minor, Art History and Visual Culture
- Minor, Graphic Design
- Minor, Interior Design
- Minor, Photography
- Minor, Studio Art
- MA, Art, Concentration in Art
- MA, Art, Concentration in Art Education
- MA, Art, Concentration in Art History and Visual Culture
- MFA, Art, Concentration in Digital Media Art
- MFA, Art, Concentration in Photography
- MFA, Art, Concentration in Pictorial Arts
- MFA, Art, Concentration in Spatial Arts

San José State University is an accredited institutional member of the National Association of Schools of Art and Design. The art and design curricula honor diversity and aspire to high levels of productivity and creativity. The principal fields of study include animation/illustration, art history and visual culture, design, and studio art. The curricula leading to undergraduate degree options within these programs provide opportunity for both general and specialized study. 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 BS and BFA degrees.

The Art Program offers liberal arts and professional undergraduate studies in a wide variety of disciplines. The program in Art History and Visual Culture is designed to begin the preparation of the professional college and university teachers, research personnel, museum curators, conservators and librarians specializing in art history and visual culture.

The 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 Design area is divided into three programs: graphic design, interior design and industrial design. A liberal arts, BA 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.

The MA – Art Program is designed to increase the artistic growth of the candidate and to provide the basis for further study through two emphases: art education and art history.

The MA Art, Concentration in Art History and Visual Culture is designed to prepare community college teachers, museum staff, and students pursuing Ph.D. degree 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, performance installations and fiber), 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 school galleries (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 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 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 of non-western art. 3 units may be art studio or design.

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 295

Courses in Support of the Major 12-16

Approved Upper Division History or Humanities Courses 6

Foreign Language 6-10

— OR —

Art/Design Foundation Courses 6-10

(6 units: ART 012, ART 013, ART 014, or ART 024 recommended); and SJSU studies courses for Area R and S (6 units: ANTH 140; CA 172, RELS 191, RTVF 110, URBP 101 or WOMS 101 strongly recommended)

Electives 6-10

Total Units Required 120

BA – Art, Concentration in Design Studies

Program for students who wish a broad-based study of design fields, 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.

Students interested in the BA – Art, Design Studies, must begin their education in one of the three design disciplines (graphic design, industrial design, interior design).

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

ART 001, ART 014 and ART 024 (7); ART 012 or ART 013 (3); ARTH 070A, ARTH 070B or ARTH 070C (3); ARTH 011 (3)

Requirements in the Major 38-39

Required Emphasis (Choose One) ... 14-15

Graphic Design 15

DSGD 099, DSGD 104 and DSGD 105 (12); ART 112A or PHOT 040 (3); ART 026 or DSID 021 (3)

Industrial Design 14

DSID 021, DSID 022, DSID 031, DSID 032 and DSGD 099

Interior Design 15

DSIT 015, DSIT 029, DSIT 033, DSIT 034 and DSIT 103

Design Studio Electives Outside Required Emphasis Field 6

Art or Design History 15

ARTH 072 (3); 12 units of upper division Art and Design History courses (12)

B.A. Senior Project 3

DSGN 197

Support for the Major 12

With approval of an advisor, select 12 units of support courses from business, social sciences, technology and related disciplines. May include a minor.

Open Electives 3-4

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 22

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

Complete 15 units from the following.

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 145, 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 6-16

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 General Studio Practice. This program is approved as subject matter preparation for a single subject credential in art, pending final approval 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 and Design advisor who specializes in teacher preparation to determine requirements for single subject matter competency certification in art.

Semester Units

General Education Requirements45

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 Education2

Preparation for the Major and Supporting Courses24

ART 012, ART 013, ART 024 and ART 046 (12); ART 025 or ART 026 (3); ARTH 011 (3); ARTH 070A, ARTH 070B or ARTH 070C (3); PHIL 066 or PHIL 106 (3)

Requirements in the Major33

Core Requirements24

ART 061, ART 138, ART 139 and DSGD 083 (12); Complete six units from: ART 055, ART 112A, ART 151, ART 152, ART 153, ART 155, ART 158, ART 159, ART 162, ART 164, ART 166, DSGD 104, PHOT 040, ARTH 198 (6); Complete six units from: ART 042, ART 047, ART 068, ART 132, ART 133, ART 134, ART 140, ART 143, ART 144, ART 147, ART 149, ART 154, ART 171 (6)

Upper Division Art History6

ARTH 182A, ARTH 183A, ARTH 183B, ARTH 193B, ARTH 194A, ARTH 194B, ARTH 195 or ARTH 197A (3); One additional course from the preceding or the following: ARTH 190B, ARTH 191A (3)

Capstone Course3

ART 180, ART 197 or ARED 150

Electives16

Total Units Required120

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 the BA – Art Program. 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 Fine Arts Program 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 the BA – Art.
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 Requirements45

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 Education2

Preparation for the Major22

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 Major66

Digital Media Art Concentration

Requirements30

ART 101A, ART 101B, 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 Requirements6

Two courses. Recommend: ARTH 191A.

Capstone Requirement6

ART 198D and ART 199

Art and Design Electives15

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

Upper Division Support Courses9

Courses in another department approved by advisor

Total Units Required135

BFA – Art,

Concentration in Photography

Semester Units

General Education Requirements45

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 Education2

Preparation for the Major22

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 Major63

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 Requirements6

ARTH 126 or PHOT 126 (3); ARTH 190B or ARTH 191A recommended (3)

Art and Design Electives21

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

Capstone Requirement6

ART 198 and ART 199

Total Units Required132

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 145, 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 145, 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

Professional Design Programs

The School of Art and Design offers professional programs in graphic, industrial and interior design. The curricula of the three programs combine 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. Apply initially for the BA – Art since admission to the design program (BFA Graph Design, BA Interior Design and BS Industrial Design degrees) is by portfolio review for enrolled students. Students must apply for the portfolio review upon completion of 60 semester units, but no later than completion of 90 semester units.

Portfolio reviews are held each semester for the following semester. Instructions are available in the design program 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 1, 12, 14, 24, PHOT 40, DSGD 99, 104, 105.

Industrial Design: ART 13, 24, DSGD 99, DSID 21, 22, 31, 32, TECH 103 and 120.

Interior Design: ART 12 or 13, 14, 24, DSIT 15, 29, 33, 34, 103 and TECH 27.

BFA – Art, Concentration in Animation/Illustration

	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	34
ART 001, ART 012, ART 014 and ART 024 (13); ART 026 or ART 028 (3); ART 050, ART 051, ART 055, ART 112A and ART 112B (12); ARTH 011 (3); ARTH 070A, ARTH 070B or ARTH 070C (3)	
Requirements in the Major	33
Choose an Emphasis	21
Animation Emphasis	21
ART 113A, ART 113B, ART 114, ART 115, ART 118, ART 129A and ART 178	
Illustration Emphasis	21
ART 113A, ART 113B, ART 114, ART 115, ART 116, ART 117 and ART 178	
Upper Division Art History Requirements	6
Capstone Requirement	6
ART 198A and ART 199A	
Upper Division Art and Design Electives	18
Total Units Required	132

BFA – Graphic Design

This program prepares students for intellectually and aesthetically challenging careers in Graphic Design by providing courses that emphasize conceptual thinking and professional practice. The program concentrates on the organization and visual communication of information and includes computer-related and technical information as a supportive part of the curriculum. Passage of two portfolio reviews are required for admission to the program. Successful passage of two Junior and two Senior Reviews are required to advance through the BFAGD program. BFA – Graphic Design students are required to complete a three-unit professional internship as part of their degree requirements.

Semester Units

General Education Requirements45

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 Education2**Preparation for the Major**28

ART 001, ART 012, ART 013, ART 014, ART 024 and PHOT 040 (16); ART 026 (3); ARTH 072 (3); ARTH 070A, ARTH 070B or ARTH 070C (3); DSGD 083 (3)

Requirements in the Major54**Prerequisite for Admission to the Major**9

DSGD 099, DSGD 104 and DSGD 105

Requirements in the Major27

DSGD 102, DSGD 103A, DSGD 103B, DSGD 106, DSGD 107A, DSGD 107B, DSGD 108, DSGD 186 and DSGN 127 (27)

Upper Division Art History/Design History6**Upper Division Art/Design/Photo Electives**12

ART 101A, ART 112A, ARTH 190B, ARTH 191A, ARTH 193A, ARTH 193B and PHOT 121

Support for the Major3

PHOT 112 or PHOT 115

Total Units Required132**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, 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 Designer's Society of America.

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 Program Office).

Semester Units

General Education Requirements36

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 Education2**Preparation for the Major**19

ART 001 (1); ART 012 or ART 013 (3); ART 024 or ART 026 (3); ARTH 070B and ARTH 072 (6); PHYS 009 or PHIL 057 (3); PHYS 001 (3)

Requirements in the Major57**Prerequisites for Admission to the Major**15

DSID 021, DSID 022, DSID 031, DSID 032, DSID 032A and DSGD 099

Upper Division Requirements42

DSID 121 (3), DSID 123 (6), DSID 123A (1), DSID 125 (6), DSID 125A (1), DSID 126 (3), DSID 128 (6), DSID 128A (1), DSID 129 (3), DSID 176B and DSGN 127 (3) (36); Complete six units from: DSGD 102, DSGD 104, DSGD 105, DSID 124, DSID 130, DSID 131, DSIT 107, DSIT 108 (6)

Support for the Major15

BUS 130, BUS 160, TECH 025, TECH 143 and PHIL 110

Electives3

Approved by program advisor.

Total Units Required132**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 three 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 Requirements42

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 Education2**Preparation for the Major**16

ART 001, ART 014 and ART 024 (7); ART 013 or ART 026 (3); ARTH 070A or DSGD 083 (3) and ARTH 070B (3)

Support for the Major12

TECH 027 and TECH 128 (6); ENVS 001 or PHIL 110 (3); ENVS 132, URPB 151 or URPB 152

Prerequisites to Admission to the Major15

DSIT 015, DSIT 029, DSIT 033, DSIT 034 and DSIT 103

Requirements in the Major36

ARTH 192A (3); DSIT 080, DSIT 098, DSIT 102, DSIT 104, DSIT 105, DSIT 106, DSIT 107, DSIT 108, DSIT 109 and DSIT 111 (30); DSGN 127 (3)

General Elective3**Art and Design Electives**6**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 – 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

ART 012 (3), ART 024 (3), ART 025 or ART 026 (3) and ART 046 (3); ART 138 or ART 139 (3); Complete three units from: ARTH 182A, ARTH 190B, ARTH 191A, ARTH 193A, ARTH 193B, ARTH 194A, ARTH 195, ARTH 197A (3); Art electives (3).....21

Total Units Required21

Minor – Graphic Design

	Semester Units
Preparation for the Minor	22
ART 001 (1); ART 012, ART 013, ART 014 and ART 024 (12); ART 026 or DSID 021 (3); ARTH 072 (3); ARTH 070A, ARTH 070B or ARTH 070C (3)	
Support for the Minor	9
PHOT 040 (3); PHOT 110 or PHOT 112 (3); Upper division art history or design history (3)	
Requirements in the Minor	12
DSGD 083, DSGD 099, DSGD 104 and DSGD 105	
Total Units Required	43

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 José State University.	
Total Units Required	18

Minor – Interior Design

	Semester Units
Preparation for the Minor	16
ART 001, ART 014 and ART 024 (7); ART 012 or ART 013 (3); ARTH 070A or ARTH 070C (3) and ARTH 070B (3)	
Requirements in the Minor	21
DSIT 015, DSIT 029, DSIT 033, DSIT 034 and DSIT 103 (15); DSIT 080 or DSIT 098 (3); TECH 027, ENVS 001, PHIL 110 (3)	
Total Units Required	37

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 José State University.	

Total Units Required 18

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 School of Art and Design advisor during the first semester of the student's junior year.

Graduate Programs

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

1. The MA – Art, with concentrations or emphases in:

- Art Education (due to space limitation, the art education faculty is not accepting applications for the 2008-2010 academic years)
- Art History and Visual Culture
- Design (due to space limitations, the graphic design faculty is not accepting applications to the MA – Art Program for the 2008-2010 academic years)
- Fine Art (due to space limitations, the art studio faculty is not accepting applications to the MA – Art Program for the 2008-2010 academic years)

2. The MFA – Art, with concentrations in:

- Digital Media Art
- Photography
- Pictorial Arts including: Painting, Drawing and Printmaking
- Spatial Arts including: Ceramics, Crafts, Glass, Installation, Performance, Weaving/Textiles, 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 or Emphases in Art Education, Art History and Visual Culture, Fine Art, Design**Step I. Admission to MA – Classified Standing**

Admission to any of these programs requires two steps:

A. In addition to the university requirements as outlined in this catalog, applicants must meet requirements for their area:

- Design areas: Completion of 60 or more college level semester units or equivalent in art courses, including 12 units in art history of which 6 units are upper division units, and a minimum 3.0 GPA for all coursework is generally required. Courses in related areas and the applicant's professional background will also be assessed in reviewing the application. The Graphic Design program is not accepting graduate students at this time.
- 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.
- Multimedia Computing: Completion of BA in appropriate field and demonstrated skills in computer programming, authoring languages or web design.

B. Successful completion of the MA – Art admissions review. At the review, appropriate materials submitted by applicants are examined by members of the faculty to determine whether the level of quality required in the MA – Art program has been attained. The materials consist of slides of creative work for applicants to studio areas and evidence of writing and research ability for art education and art history and visual culture applicants.

There are two MA – Art admission reviews each year, one in the fall, one in the spring. Passing the review allows one to enroll the following semester. Write or call the School of Art and Design Graduate Office, 408-924-4346, for details.

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 Studies and Research website at 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. 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.

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 Studies and Research website at www.sjsu.edu/gradstudies.

The School of Art and Design offers two plans for attaining the MA – Art:

Plan A: Written thesis.

Plan B: Creative project.

Plan A: Written Thesis

1. Purpose: This plan is designed primarily for students in art education and art history and visual culture, but is open to any applicant who desires to approach the subject from a theoretical point of view concluding in a written thesis.

2. General Requirements: 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.
3. 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. Four seminars (12 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 comprehensive written examination designed to test general competence in art history and visual culture. 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.
4. 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.
5. Thesis Examination: The candidate for the MA – Art degree must successfully pass a final examination based on the thesis.

Plan B: Creative Project

1. Purpose: Plan B is designed both for students who wish to carry out advanced creative studio projects in art, design and multimedia and for students in art education or art history and visual culture whose studies and research involve problem solving projects which culminate in written reports of a non-thesis type.
2. General Requirements: The student's proposed program must list a total of 30 semester units, of which at least 15 must be at the 200 level, including 3 units of ART 297B. Electives to complete the 30 units may be drawn from approved 100 and 200 level courses.
3. Area Requirements (in addition to the general requirements above):
 - a. Art Education: Same as Plan A, except ART 297B, Master's Project, is taken in place of ART 299, Master's Thesis.
 - b. Art History and Visual Culture: Same as Plan A, except ART 297B, Master's Project, is taken in place of ART 299, Master's Thesis or Project.

4. MA – Art Project: After admission to candidacy the project will be developed under the guidance of the candidate's MA – 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 School of Art and Design a satisfactory report of the project, following the school's approved format. Art education and art history and visual culture project reports will be written. Studio project reports will document the creative project with color photos and must be accompanied by a set of 35mm color slides 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. Art Final Examination: The candidate for the MA – Art must successfully complete an oral examination based on the subject area(s) of the project, as defined by the candidate's project committee.

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 Studies and Research website at 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 Studies and Research 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

The MFA Art program is offered under Plan B only.

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 School of Art and Design 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** 9
ART 210
- Graduate Tutorials in Area of Concentration** 6
ART 220
- Seminars** 9
ART 281, ART 282A and ART 282B
- Additional Course** 3
ART 174A, ART 201, ART 212 or ART 276
- Upper Division Art History** 6
- Electives** 21
- Special Study** 3
ART 298A
- Project** 3
ART 298B

Total Units Required 60

MFA – Photography

Semester Units

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

Total Units Required 60

MFA – Pictorial Art

Semester Units

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

Total Units Required 60

MFA – Spatial Art

Semester Units

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

Total Units Required

Courses**ART****LOWER DIVISION****ART 001. Introduction to the Study of Art and Design**

Vocational opportunities available in the fields of art and design. Resident and guest faculty, including alumni, visiting artists and designers as guest speakers.

Lab 2 hours.

Repeatable for credit

Credit / No Credit

1 unit

ART 012. Two-Dimensional Design and Color Concepts

Theories and applications of two-dimensional design and color in visual art and design. Studio practice.

3 units

ART 013. Three-Dimensional Design Concepts

Theories and applications of three-dimensional form in visual art and design. Studio practice.

CAN ART 16

3 units

ART 014. Color

Attributes of color. Studio practice exploring theories and creative use of color in visual art and design.

3 units

ART 024. Beginning Drawing

Elements and principles of drawing. Studio practice emphasizing line, shape and light-dark used in visual art and design.

CAN ART 8

3 units

ART 025. Expressive Drawing

Drawing concepts emphasizing creative expression. Studio practice with a variety of methods and materials.

Prerequisite: ART 24.

3 units

ART 026. Representational Drawing

Observation and depiction of volume and perspective.

Prerequisite: ART 24.

3 units

ART 028. Animation/Illustration Fundamentals

Introduction to the basic elements of animation and representation. Included are motion and animation exercises to understand mass, movement through space, and reaction to external forces. Progressing to other fundamental animation studies culminating in a short original film of each student's creation.

Prerequisite: ART 12, ART 24.

Activity 6 hours.

3 units

ART 039. Multicultural Arts for Children

Focus on teaching arts of many cultures, places and times to young people (preschool through high school).

Lab 6 hours.

3 units

ART 042. Fiber Concepts

Introduction to basic vocabulary, materials and methods used in fiber and textile media. Course is repeatable for a total of 6 units.

Repeatable for credit

3 units

ART 046. Introduction to Ceramics

Studio work in ceramics; a survey of methods used by contemporary artists. Includes use of the potter's wheel, handbuilding techniques, clay preparation, glazing and firing for utilitarian and sculptural work.

CAN ART 6

3 units

ART 047. Introduction to Metalsmithing

Introduction to tools, materials and techniques for small scale metal work. Primer course for metalsmithing and jewelry.

CAN ART 26

3 units

ART 050. Visual Principles for Animation

Advances the concepts introduced in Art 12 2-D Concepts as they apply to the creation of representational, narrative imagery and as well as further application of these principles to moving and sequential imagery.

Prerequisite: ART 12, ART 24.

3 units

ART 051. Introduction to 3D Animation

Emphasis is on generating an in-depth understanding of digital media using commercial 2-D and 3-D software. Students will be introduced to the underlying mathematical and conceptual processes of computer graphics.

Prerequisites: ART 28, ART 55, and instructor consent or BFA Animation/illustration status

3 units

ART 055. Life Drawing

Anatomy and representation of the human figure. Drawing from life. Course is repeatable for a total of 6 units.

Prerequisite: ART 24 and ART 26.

Repeatable for credit

3 units

ART 061. Beginning Painting

Studio practice in selected media. Specific content, materials and subject matter may vary with instructors.

Prerequisite: ART 12, ART 14 and ART 25 (or equivalent).

CAN ART 10

3 units

ART 068. Beginning Sculpture

Expressive and technical principles in selected media. Content may vary with instructor. Course is repeatable for a total of 6 units.

Prerequisite: ART 13 or instructor consent.

Repeatable for credit

CAN ART 12

3 units

ART 074. Introduction to Digital Media

Fundamental concepts and methods of Digital Media production. Introduction to visualization software applications and web presentation techniques.

Activity 6 hours.

3 units

UPPER DIVISION**ART 100W. Writing Workshop: Fine Arts**

Advanced writing course for fine art majors, based upon philosophical issues and current professional practice in art. Clear analytical and critical writing in examination of these topics.

Prerequisite: Completion of core GE, ENGL 1B (with a grade of C or better), satisfaction of Writing Skills Test and upper division standing.

Fulfils junior level writing requirement.

ABC/No Credit

GE: Z

3 units

ART 101A. Digital Media Art 1

Introduction of the fundamental skills, software and techniques involved in the production of Digital Video. Critical discourse and contemporary art theories will be explored.

Prerequisite: ART 74, 6 units of Art study or permission of instructor.

3 units

ART 101B. Digital Media Art 2

Experimental applications of digital media art practice. Focus on information systems and structures.

Prerequisite: ART 101A or instructor consent.

3 units

ART 103. Art as System

Exploration of art as the experience of an information system. Methods and techniques for simulation, networks and information mapping

Prerequisite: ART 101A, ART 101B. Admission to BFA in Digital Media Art.

Activity 6 hours.

Repeatable for credit

3 units

ART 104. Interdisciplinary Seminar in Digital Media Art

Investigation of theoretical topics in digital media art and analysis of contemporary technology research issues.

Prerequisite: Upper division standing or instructor consent.

Repeatable for credit

3 units

ART 105. Advanced Digital Video

Advanced exploration of digital video within the context of conceptual art practice. Focus on issues and applications of digital technology and critical thinking in art with specific focus on video, the Internet and alternative media applications. Course is repeatable for 6 units.

Prerequisite: ART 101B or permission of instructor.

Lab 9 hours.

Repeatable for credit

3 units

ART 106. The Human Machine Interface

Concept design and exploration of methods involving computer controlled sensors and activators used in electronic sculpture, installation, environments or performance. Course is repeatable up to 6 units.

Prerequisite: ART 101B or permission of instructor.

Lab 9 hours.

Repeatable for credit

3 units

ART 107. Advanced Projects in Digital Media Art

Advanced issues and applications of digital technology in art. Application of interactive technology in installation and performance. Emphasis on collaborative projects. Course is repeatable up to 6 units.

Prerequisite: ART 101B or permission of instructor.
Lab 9 hours.
Repeatable for credit
3 units

ART 110. History and Theory of New Media

The history of art and technology introducing contemporary critical theory and practice. Course will address digital visualization, simulation, interactive network technologies in the arts and speculate on the artistic implications of advances in engineering and science.

Prerequisite: ARTH 70B or ARTH 72 or instructor consent.
3 units

ART 112A. Introduction to Illustration/Animation

Basic principles of illustration and animation stressing composition, value drawing and technique.

Prerequisite: ART 28 and ART 55.
Activity 6 hours.
Repeatable for credit
3 units

ART 112B. Drawing for Illustration/Animation

Principles of drawing for illustration and animation: gesture, construction, anatomy and technique. An intensive study of human figure from life. Course is repeatable for credit with instructor consent for 3 units.

Prerequisite: ART 28, ART 55 and instructor consent.
Activity 6 hours.
Repeatable for credit
3 units

ART 113A. Intermediate Illustration

Exploration of basic illustration problems introducing studies in color, light and technique. Course is repeatable for credit with instructor consent for 3 units.

Prerequisite: ART 112A.
Repeatable for credit
3 units

ART 113B. Intermediate Project

Completion of a complex painting incorporating knowledge of drawing principles, construction, composition, value and technique. Course is repeatable for credit with instructor approval.

Prerequisite: ART 113A
Activity 6 hours.
Repeatable for credit
3 units

ART 114. Animation

Fundamental of animation involving the completion of a series of basic exercises in motion, action analysis and kinetics. Course is repeatable for credit with instructor approval for 6 elective units.

Prerequisite: ART 113A.
Activity 6 hours.
Repeatable for credit
3 units

ART 115. Intermediate Animation

Demonstrate understanding of animation principles through the completion of a series of advanced exercises. Course is repeatable for credit with instructor approval up to 6 units.

Prerequisite: BFA status in Illustration or Animation and ART 114.
Activity 6 hours.
Repeatable for credit
3 units

ART 116. Conceptual Illustration

Emphasis on individual expression and development of personal direction.

Prerequisite: BFA status in Illustration or Animation; ART 113B.
Repeatable for credit
3 units

ART 117. Advanced Illustration

Narrative problems for illustrative assignments, professional processes and technical accomplishment.

Prerequisite: ART 116.
Repeatable for credit
3 units

ART 118. Advanced Animation

Special problems in animation studies: film making, professional practices and portfolio preparation.

Prerequisite: BFA status in Animation or Illustration and ART 114 and ART 115.
Activity 6 hours.
Repeatable for credit
3 units

ART 129A. Digital Animation

Exploring the computer and its applications as a tool to produce innovative and experimental animation. Course is repeatable for credit with instructor approval as approved elective for 6 units.

Prerequisite: BFA status in Animation or Illustration and ART 114 or instructor consent.
Repeatable for credit
3 units

ART 129B. Digital Animation

Advanced methods exploring the computer and its applications as a tool to produce innovative and experimental animation. Course is repeatable for credit with instructor approval as approved elective for 6 units.

Prerequisite: BFA status in Animation or Illustration and ART 114, ART 115, ART 129A or instructor consent.
Repeatable for credit
3 units

ART 131. Glaze Theory and Applications

Formulation of clay bodies, glazes and glasses, testing procedures, cost analysis, toxicology, and appropriate application to individual work.

Prerequisite: ART 46 or equivalent.
Repeatable for credit
3 units

ART 132. Intermediate Ceramics

Investigation of ceramic form and surface design with emphasis on the vessel. Development of skills on the potter's wheel and in glazing, kiln loading and firing. Included are raku, salt, earthenware, stoneware and porcelain.

Prerequisite: ART 46.
Repeatable for credit
3 units

ART 133. Ceramic Sculpture

Focus on handbuilding and nontraditional techniques in clay and related media. Includes gallery and studio visits.

Prerequisite: ART 13, ART 46 or instructor consent.
Repeatable for credit
3 units

ART 134. Advanced Ceramics

Focus on personal stylistic development, individual critiques and portfolio preparation. Includes gallery and studio visits.

Prerequisite: ART 132 or ART 133.
Repeatable for credit
3 units

ART 135. Moldmaking for Artists

Introduction to moldmaking for upper division/graduate students. Course will include techniques for rubber molds for wax or plastic, molds for pressed clay, slip casting and waste molds. Course is repeatable for a total of 6 units.

Prerequisite: ART 13 or instructor consent.
Offered only occasionally.
Repeatable for credit
3 units

ART 136. Ceramic Surfaces and Kilns

Basic technology of glazing and firing ceramic objects; contemporary principles of design, construction and firing of organic, fossil fuel and electric kilns. Course is repeatable for a total of 6 units.

Prerequisite: ART 46.
Repeatable for credit
3 units

ART 137. Figure Modeling

Representation of the human figure in three dimensions. Sculpting in clay from a live model. Course is repeatable for a total of 6 units.

Prerequisite: ART 13 and ART 55 or instructor consent.
Activity 6 hours.
Repeatable for credit
3 units

ART 138. Studio Art Experiences for Young People

Two and three-dimensional art experiences using materials commonly found in schools with content focused upon perception, expression and forms of criticism and aesthetics appropriate for young people.

Prerequisite: Upper division standing.
3 units

ART 139. Multicultural Art Education with Studio Experience

Varied means of expression and ways of learning about cross-cultural imagery, values and beliefs through correlated studio experiences in the visual and performing arts.

Prerequisite: Upper division standing.
3 units

ART 140. Glass

Introduction to glass working techniques, chemistry, history and concept. Basic glass blowing, sand casting, slumping, fusing, cold working, stained glass and gluing techniques. Taught through a series of hands-on projects.

3 units

ART 141. Glass Casting and Advanced Blowing

Technical and esthetic aspects of glass for sculpture and design. Advanced blowing, kiln casting, mold making, lamp working, lathe techniques and surface treatments. Repeatable for up to 21 units of credit.

Prerequisite: ART 140, ART 13 or instructor consent.
Activity 6 hours.
Repeatable for credit
3 units

ART 143. Woven Structure

Historical techniques and their application to individual production, professional skills and personal expression.

Prerequisite: ART 42 (or equivalent).
Repeatable for credit
3 units

ART 144. Textile Design

Historical and contemporary methods and personal expression.

Prerequisite: ART 12.
Repeatable for credit
3 units

ART 145. Dimensional Textiles

Dimensional textile construction using historical and experimental techniques for contemporary expression.

Prerequisite: Art 14.
Repeatable for credit
3 units

ART 147. Metalsmithing and Jewelry

Technical and esthetic aspects of metalsmithing and jewelry design. Fabricating, surfacing, soldering, raising, forming and forging.

Prerequisite: ART 47.
Repeatable for credit
3 units

ART 149. Casting for Jewelry and Small Sculpture

Technical and esthetic aspects of metalcasting for small-scale sculpture and jewelry. Pattern materials, gating techniques, burnout procedure, vacuum casting, centrifugal casting and finishing.

Prerequisite: Upper division standing or permission of instructor.
Repeatable for credit
3 units

ART 151. Printmaking – Serigraphy

Screen printing and related photographic processes. Studio practice.

Prerequisite: ART 61 (or equivalent).
Repeatable for credit
3 units

ART 152. Printmaking Lithographic Processes

Studio practice. A comprehensive study of the practice of stone and metal plate lithography. Course is repeatable for a total of 9 units.

Prerequisite: ART 61 (or equivalent).
Repeatable for credit
3 units

ART 153. Printmaking Intaglio Processes

Studio practice towards an understanding of the methods, techniques and procedures necessary to make intaglio prints. Course is repeatable for a total of 9 units.

Prerequisite: ART 61 (or equivalent)
Repeatable for credit
3 units

ART 154. Papermaking

Two and three-dimensional handmade paper processes, including forming, coloring and casting.

Prerequisite: ART 61, ART 162 or ART 68.
Repeatable for credit
3 units

ART 155. Printmaking Monotype

Studio practice. An investigation of the methods, techniques and syntax of the monotype and monoprint. Course is repeatable for total of 9 units.

Prerequisite: ART 61 (or equivalent).
Repeatable for credit
3 units

ART 156. Intermediate Drawing

Further development of essential skills and abilities in the representation of the solid form and figure. Course is repeatable for credit up to 6 units.

Prerequisite: ART 24, ART 25, ART 26 or ART 28, ART 55 or ART 112A.
Activity 6 hours.
Repeatable for credit
3 units

ART 157. Intermediate Life Drawing

Exposure to a wide range of stylistically diverse figurative compositions from which students can further develop their own visual vocabulary. Course is repeatable for credit up to six units.

Prerequisite: ART 24, ART 26, ART 55 and ART 112A or ART 156.
Activity 6 hours.
Repeatable for credit
3 units

ART 158. Advanced Drawing

Form and expression in drawing. Selected media.

Prerequisite: ART 24, ART 25, ART 26 or ART 28; ART 55 or ART 112A, ART 156 or instructor consent.
Repeatable for credit
3 units

ART 159. Advanced Life Drawing

Course is repeatable for a total of 9 units.

Prerequisite: 3 units of ART 55 and 3 additional units of ART 55 or ART 112B.
Repeatable for credit
3 units

ART 162. Watercolor

Painting with various water base media. Course is repeatable for a total of 12 units.

Prerequisite: ART 12, ART 14 and ART 25 (or equivalent).
Repeatable for credit
3 units

ART 164. Intermediate Painting

Emphasis may vary with instructor. Course is repeatable for a total of 6 units.

Prerequisite: ART 61 (or equivalent).
Repeatable for credit
3 units

ART 165. Figure Painting

Figure and portrait painting from the model.

Prerequisite: ART 55, ART 61 and ART 164 (or equivalent).
Repeatable for credit
3 units

ART 166. Advanced Painting

Emphasis may vary with instructor.

Prerequisite: ART 61 and 6 units of ART 164, ART 165 or equivalent.
Repeatable for credit
3 units

ART 168. Woodworking

Introduction to the physical structure of wood and to the design and construction of furniture and sculptural objects in wood. Also, an introduction to the historical use of wood joinery in man-made objects. Course is repeatable for 6 units of credit.

Prerequisite: ART 13 or instructor consent.
Repeatable for credit
3 units

ART 169. Metal Sculpture

Conception and creation of three-dimensional aesthetic form using metal techniques including casting, welding, fabrication and other forming processes.

Prerequisite: ART 13.
Repeatable for credit
3 units

ART 170. Fabricated Sculpture

Fabricated Sculpture includes welding training, a concise history of fabricated metal sculpture since 1945, and studio time wherein the student practices skills and executes three steel sculptures.

Prerequisite: ART 13.
Lab 6 hours.
Repeatable for credit
3 units

ART 171. Advanced Sculpture

Self expression and advanced techniques in sculpture. Emphasis will be placed on individual development, current directions and goals.

Prerequisite: 6 units of sculpture.
Repeatable for credit
3 units

ART 172. Systems/Structures: Advanced 3-D

Advanced 3-dimensional design concepts, with a focus on the intersection of sculpture and design. Equal emphasis on fabrication skills and idea development.

Course is repeatable for a total of 6 units

Prerequisite: ART 13 or instructor consent.
Repeatable for credit
3 units

ART 173. Installation Art: The Shape of Space

Exploration of cross-disciplinary artmaking, with an emphasis on conceptual development and critical dialogue. Students make installation art and site-specific artworks using a variety of techniques and processes, including time-based media.

Prerequisite: ART 13 or instructor consent.
Repeatable for credit
3 units

ART 174A. Museum and Gallery Operations

Theoretical and technical problems of gallery and museum work including administration, security and curatorship.

Prerequisite: Upper division standing.
3 units

ART 174B. Internship: Museum and Gallery Operations

Supervised internship in museum or gallery. Experience including installation, curating and administration. Course is repeatable for a total of 6 units.

Prerequisite: ART 182A.
Repeatable for credit
Credit / No Credit
3 units

ART 175. Special Topics in Studio Art

Varying concepts, media or techniques. Emphasizing individual expression, professional ability and recent movements and directions in art.

Prerequisite: Upper division standing in art.

Repeatable for credit

3 units

ART 178. Art Field Work

Professional practice in a selected field.

Prerequisite: Application for assignment made preceding semester. Supervisor and school approval.

Repeatable for credit

Credit / No Credit

1-3 units

ART 179. Special Problems in Art

Individual study on a tutorial basis.

Prerequisite: Qualified seniors or graduates.

Repeatable for credit

Credit / No Credit

3 units

ART 180. Individual Studies

Special topics or projects by arrangement with instructor. Course is repeatable up to 4 units of credit toward graduation.

Prerequisite: Majors or minors with School of Art and Design consent.

Repeatable for credit

Credit / No Credit

1-3 units

ART 197. BA Senior Project

Creation of a studio art or design capstone project consisting of new work in media selected by student to be documented and presented to studio or design faculty.

Prerequisite: 15 units of upper division work in the major.

Credit / No Credit

3 units

ART 198. BFA Seminar

Preparation for BFA project and postgraduate career planning, this course includes field trips, class discussions and studio visits with art professionals.

Prerequisite: Prior acceptance in the B.F.A. program.

3 units

ART 198A. BFA Senior Seminar in Animation/Illustration

The first in a two-course sequence that constitutes the capstone for the BFA degree in Animation/Illustration. In Art 198A, students will undertake the necessary research to successfully complete the second course in the sequence.

Prerequisite: ART 115, ART 116, ART 117 and admission to the BFA Art, Concentration in Animation/Illustration program.

3 units

ART 198D. BFA Seminar in Digital Media Art

Preparation for BFA project and postgraduate career planning. Includes field trips, discussion and studio visits.

Prerequisite: Senior status, BFA status in Digital Media Art.

3 units

ART 199. BFA Project

A project demonstrating professional competence in area of concentration. A gallery exhibition with the approval of the student's advisory committee is required.

Prerequisite: 30 units of upper division art, admission to the BFA program and ART 198, or ART 178 with advisor's approval.

Credit / No Credit

3 units

ART 199A. BFA Senior Project in Animation/Illustration

The second in a two course sequence constituting the capstone for the BFA degree in Animation/Illustration. Students will be required to finish a sequential narrative suitable for a book, short animated film or short live-action film.

Prerequisite: ART 198A and Admission to the BFA, Art, Concentration in Animation/Illustration program.

3 units

GRADUATE**ART 201. Aspects of Criticism**

Examines the basis for critical judgments and explores the relationship of language and its expression to the experience of art.

Prerequisite: Classified or conditionally classified status in art.

Repeatable for credit

3 units

ART 202. Seminar in Spatial Arts

Investigation and analysis of problems related to spatial and/or pictorial art. Emphasis upon creation and critique of student work. Repeatable for credit.

Prerequisite: Classified status in art or instructor consent.

Repeatable for credit

3 units

ART 204. Seminar in Pictorial Arts

An investigation of advanced issues related to pictorial art including classroom discussions, critiques and field trips.

Prerequisite: Classified status in art or instructor consent.

Repeatable for credit

3 units

ART 208. Graduate Photography Critique

Analysis of contemporary photographic theory and practice. Emphasis upon creation and critique of student work.

Prerequisite: Classified status in art or instructor consent.

Repeatable for credit

3 units

ART 210. Seminar in Digital Media Art

Theoretical discourse involving art and information culture. Review and analysis of contemporary theory and critical literature. Emphasis on collaborative activities and art practice.

Prerequisite: Classified status in art or instructor consent.

Repeatable for credit

3 units

ART 212. Image as Icon

An examination of a particular theme in contemporary art practice. Course may be repeated for up to a total of 9 units.

Prerequisite: Instructor consent (upper division students).

Repeatable for credit

3 units

ART 217. Tutorials in Pictorial Arts

Individual projects in painting, drawing and printmaking supervised by an instructor.

Prerequisite: Classified or conditionally classified status in art and instructor consent.

Repeatable for credit

3 units

ART 219. Tutorials in Spatial Arts

Individual projects in sculpture, installation, performance and other 3-D media supervised by an instructor.

Prerequisite: Classified or conditionally classified status in art and instructor consent.

Repeatable for credit

3 units

ART 220. Tutorials in Digital Media Art

Individual problems in selected area of research or practice.

Prerequisite: Classified status in art and instructor consent.

Repeatable for credit

3 units

ART 221. Tutorials in Design

Individual projects in specialized design areas supervised by an instructor.

Prerequisite: Classified or conditionally classified status in art and instructor consent.

Repeatable for credit

3 units

ART 222. Tutorials in Photography

Individual projects employing photographic media supervised by an instructor.

Prerequisite: Classified or conditionally classified status in art and instructor consent.

Repeatable for credit

3 units

ART 260. Special Tutorials in Art

Individual problems in a selected art area supervised by an instructor.

Prerequisite: Classified or conditionally classified status in art and instructor consent.

Repeatable for credit

Credit / No Credit

3 units

ART 276. Artists Teaching Art

Seminar will examine theoretical and practical issues of art education which relate to traditional institutions of higher learning as well as to other teaching opportunities in the community.

Prerequisite: Classified graduate status or instructor consent.

Repeatable for credit

3 units

ART 281. Interdisciplinary Critique Seminar

Interdisciplinary peer group critiques and discussion of individual student work.

Prerequisite: Admission to the MFA in Art program.

Repeatable for credit

3 units

ART 282A. Seminar in the Theory and Criticism of Contemporary Art

A historical approach to the thought of major critics and theoreticians of contemporary art.

Prerequisite: ARTH 191A and admission to classified MFA status in art or instructor consent.

3 units

ART 282B. Seminar in Contemporary Art

An examination of a particular theme in contemporary art theory. Repeatable for credit.

Prerequisite: ARTH 191A and admission to classified MFA status in art or instructor consent.

Repeatable for credit

3 units

ART 297A. Master's Special Study

Advanced individual research in an area closely related to the master's thesis, research or project. Course may be repeated for a total of 6 units.

Prerequisite: Acceptance of qualifications for candidacy by Art Graduate Committee and permission of Thesis, Research or Project Committee chair.

Repeatable for credit
Credit / No Credit
3 units

ART 297B. Master's Project

Advanced projects in Creative Expression.

Prerequisite: Admission to candidacy for the master's degree in art.
Repeatable for credit
Credit / No Credit
3 units

ART 298A. MFA Special Study

Advanced individual research in an area closely related to the MFA in Art project.

Prerequisite: Admission to candidacy for the MFA in Art degree.
Repeatable for credit
Credit / No Credit
3 units

ART 298B. MFA Project

A creative project of professional caliber.

Prerequisite: Admission to candidacy for the MFA in Art degree.
Repeatable for credit
Credit / No Credit
3 units

ART 299. Master's Thesis or Project

Advanced problems in research. Course may be repeated for a total of 6 units.

Prerequisite: Admission to candidacy for the master's degree in art.
Repeatable for credit
Credit/No Credit/Report in Progress
3 units

ART EDUCATION**UPPER DIVISION****ARED 150. Field Experience in the Arts**

Provides opportunities for those considering teaching, K-12 levels, to interact with outstanding teachers of the arts in the region through structured field experiences in classrooms, reflective writing and weekly discussion in a seminar setting.

Prerequisite: ART 138 or ART 139, upper division standing, instructor consent.
Lecture 2 hours/activity 2 hours.
3 units

ARED 184I. Student Teaching for Art Individualized Interns

Supervised student teaching in art class(es) in the public school where the student is employed as an Individualized Intern. Course is repeatable for a total of 12 units.

Prerequisite: Admission to Single Subject Credential Program; art advisor and Single Subject Coordinator consent.
Repeatable for credit
Credit / No Credit
2-4 units

ARED 184Y. Student Teaching II – Classroom Teaching

Minimum 80-120 class periods of classroom, teaching laboratory or field teaching in appropriate single subjects, grades K-12 and related teaching activities and seminar.

Prerequisite: Major and Education Department joint approval.
Repeatable for credit
Credit / No Credit
4-6 units

ARED 184Z. Student Teaching III – Classroom Teaching

May be in different subject/school and will be at a different grade level.

See ARED 184Y.

Repeatable for credit
Credit / No Credit
4-6 units

ARED 338. Principles of Art Education

Analysis of the function of art in secondary schools; survey of literature on art education; organization and presentation of demonstration lessons.

Corequisite: ARED 184Y.
3 units

ART HISTORY AND VISUAL CULTURE**LOWER DIVISION****ARTH 010. Art Appreciation**

Introduction to art for the general student. Illustrated lectures on creative projects in painting, sculpture and architecture from various historical periods and cultures. Emphasis on style, form and meaning. Focus varies with instructor.

3 units

ARTH 011. Modern Art History

Introductory survey of 20th and 21st century art, its history, and its contexts. Related developments in illustration, design, other forms of art production, and cultural institutions such as museums, galleries, publications also considered.

Pre/Corequisite: ART 12 or ART 13 or PHOT 40 or instructor consent.
3 units

ARTH 070A. Art History, Prehistoric to Medieval

Western painting, sculpture and architecture from Prehistoric times through the Middle Ages. Important art works of Egypt, Greece, Rome and Medieval Europe.

CAN ART 2
GE: C1
3 units

ARTH 070B. Art History, Renaissance to Modern

Western painting, sculpture and architecture from the Renaissance to the present. Masters of the Renaissance, Baroque, Rococo, Neo-Classical, Romantic and Modern periods, including Da Vinci, Michelangelo, Durer, Rembrandt, Vermeer, David, Delacroix and Monet.

CAN ART 4
GE: C1
3 units

ARTH 070C. Arts of Asia

Major trends in the art of China, India and Japan, as well as Southeast and Central Asia and Korea, from the Neolithic period to the twentieth century.

GE: C1
3 units

ARTH 072. Design in Society

Considers the cultural role of design in addressing human needs in shaping the environment, in providing shelter, clothing, utilitarian objects, and transportation, in visual communication for political and entertainment purposes.

GE: C1
3 units

ARTH 080. The Applied Arts in Interior Design

International survey of furniture and interior architectural details from the fifteenth century to the present. Emphasis on nineteenth and twentieth century figures who have made a significant impact in the field.

3 units

UPPER DIVISION**ARTH 101. Introduction to Practice of Art History**

Introduction to practice of art history including visual analysis, research tools, and examination of professional options.

Prerequisite: ARTH 70A or ARTH 70B or ARTH 70C or instructor consent.
3 units

ARTH 110. History and Theory of New Media

See ART 110.

3 units

ARTH 126. History of Photography

Technical developments and aesthetic trends in photography traced from its invention in the nineteenth century to the present day. Slide presentations, discussions, field trips.

Prerequisite: ARTH 70B or instructor consent.
3 units

ARTH 152. Visual Culture and Jewish Identity

Jewish Art explores the diversity of Jewish art as it responds to changing social, political, and economic climates from late antiquity to the present. Repeatable when instructor changes.

Prerequisite: Upper division standing or instructor consent.
Repeatable for credit
3 units

ARTH 174A. Museum and Gallery Operations

See ART 174A.

3 units

ARTH 174B. Internship: Museum and Gallery Operations

See ART 174B.

Repeatable for credit
Credit / No Credit
3 units

ARTH 175. Theories of Art History and Art Criticism

The study of approaches used by professional art historians and critics. The focus will be on 20th century writers who helped shape the development of contemporary art history and criticism.

Prerequisite: Upper division standing, 6 units of ARTH 70A, ARTH 70B, and/or ARTH 70C or instructor consent.
Repeatable for credit
3 units

ARTH 176A. Graphic Design History and Theory

The history of graphic design and typography with an emphasis on the 20th century. Define technological, historical and theoretical concerns and influences on individuals and movements in graphic design.

Prerequisite: ARTH 72 or instructor consent.
3 units

ARTH 176B. Industrial Design in Society

Design and the crafts of the nineteenth and twentieth centuries. Morris, Van de Velde, Mackintosh and Eames.

Prerequisite: Passage of BS portfolio review in a design field or instructor consent.

3 units

ARTH 178. Art History Field Work

Professional practice in a selected field of Art History.

Prerequisite: Application for assignment made preceding semester. Supervisor and school approval.

Repeatable for credit
Credit / No Credit

1-3 units

ARTH 180. Individual Studies in Art History

Special topics or projects by arrangement with instructor. Course is repeatable up to 4 units of credit toward graduation.

Prerequisite: Majors or minors with School of Art and Design consent.
Repeatable for credit
1-4 units

ARTH 181. Special Topics in Art History

In-depth analysis of a selected art historical topic.

Prerequisite: ARTH 70A and ARTH 70B or instructor consent.
Repeatable for credit
3 units

ARTH 182A. Art of the Americas

A survey of architecture, ceramics, metalwork, sculpture, painting and textiles of North, South, and Meso American cultures.

Prerequisite: ARTH 70A or instructor consent.
3 units

ARTH 182B. American Art

From the Colonial Period to 1940. Social context of America.

Prerequisite: Upper division standing.
3 units

ARTH 183A. Art of Egypt and Mesopotamia

The Arts of Egypt, Sumer, Akkad, Babylonia, Assyria, Anatolia, Hittites, and Persia (Elamite to Sassanian).

Prerequisite: ARTH 70A or instructor consent.
3 units

ARTH 183B. Art of Islam – Early Islam to the Seljuks

Focus on the varied Islamic art and architecture from the 7th century to the 13th century, early Islamic period through the Seljuks.

Prerequisite: Upper division standing or instructor consent.
3 units

ARTH 183C. Art of Islam 13th-19th Century

This course will focus on the varied Islamic art and architecture from the 13th century to the 19th century; from Mongols through the Ottomans.

Prerequisite: Upper division standing or instructor consent.
3 units

ARTH 185. Art of the Classical World

Focus on the ancient arts of Greece, Roman and Etruria from the 8th century BC through the 4th century AD. Major monuments: Parthenon, Altar of Zeus at Pergamon, Ara Pacis and Forum of Trajan.

Prerequisite: ARTH 70A or instructor consent.
3 units

ARTH 185A. Greek Art

Art of Greece from the Bronze Age through Hellenistic. Emphasis on the art in its historical, social, and cultural contexts. Major monuments: Palace at Knossos, Parthenon, Aphrodite of Knidos, and Pergamon Altar.

Prerequisite: ARTH 70A or instructor consent.
3 units

ARTH 185B. Roman/Etruscan Art

Art of Etruria and Rome from c 1000 B.C.E. to 337 C.E. Emphasis on art in its historical, social and cultural contexts. Major monuments: Etruscan tombs, Pompeii, Ara Pacis, Pantheon and Hadrian's Villa.

Prerequisite: ARTH 70A or instructor consent.
3 units

ARTH 186A. Medieval Art from Fourth to Eleventh Centuries

Art and architecture of the early Christian and Byzantine world and early medieval Europe.

Prerequisite: ARTH 70A or instructor consent.
3 units

ARTH 186B. Medieval Art from Eleventh to Fifteenth Centuries

Europe from year 1000 to the beginning of the Renaissance. Major monuments: Durham, Moissac, Chartres, Notre Dame-Paris and Reims.

Prerequisite: ARTH 70A or instructor consent.
3 units

ARTH 187A. Art of the Italian Renaissance, Fifteenth Century

Early Renaissance art and architecture. Masaccio, Botticelli, Brunelleschi and Donatello.

Prerequisite: ARTH 70B or instructor consent.
3 units

ARTH 187B. Art of the Italian Renaissance, Sixteenth Century

High Renaissance and Mannerism in Italy. Leonardo, Michelangelo, Raphael and Titian.

Prerequisite: ARTH 70B or instructor consent.
3 units

ARTH 187C. The Art of Renaissance Venice

A study of Venetian art and its urban ideology, 11th through 18th century, emphasizing the great painters and architects of the Renaissance (Carpaccio, Bellini, Titian, Tintoretto and Veronese, Mauro Codussi, Sansovino and Palladio).

Prerequisite: ARTH 70B or instructor consent.
3 units

ARTH 188A. Northern Renaissance Fourteenth and Fifteenth Centuries

Survey of art of Netherlands, France and Bohemia from mid-fourteenth through fifteenth century. Principal artists covered include the Limbourg Brothers, Van Eyck, Van der Weyden, Memling and Fouquet. Emphasis on northern painting, manuscripts, tapestry traditions, iconography and social history of northern European art.

Prerequisite: ARTH 70B or instructor consent.
3 units

ARTH 188B. Northern Renaissance, Sixteenth Century

Survey of fifteenth and sixteenth century art of Netherlands, France and Germany. Principal artists covered include Bosch, Durer, Grunewald, Holbein and Bruegel. Emphasis on northern painting, printmaking traditions, iconography, social history of northern European art.

Prerequisite: ARTH 70B or instructor consent.
3 units

ARTH 189A. Baroque Art and Architecture in Italy and France

The art and architecture of Italy and France in the late 16th and 17th centuries. Broad trends and issues, artists such as Bernini, Caravaggio, the Carracci, Borromini, Poussin, Mansart.

Prerequisite: ARTH 70B or instructor consent.
3 units

ARTH 189B. Northern Baroque Art and Architecture

Art and architecture of Spain, the Low Countries, Germany, Austria in the 17th and 18th centuries. Artists such as Velazquez, Rubens, Rembrandt, Vermeer and Goya.

Prerequisite: ARTH 70B or instructor consent.
3 units

ARTH 190A. Art of the Nineteenth Century

Western Europe from Neoclassicism through Post-Impressionism including David, Delacroix, Goya, Manet, Monet, Cassatt, Cezanne, Van Gogh and Gauguin.

Prerequisite: ARTH 70B or instructor consent.
3 units

ARTH 190B. Early Modernist Art

Critical investigation of modern art from the 1880's (Post Impressionism) to World War I with an emphasis on painting and sculpture with some attention paid to architecture, photography, printmaking and design.

Prerequisite: ARTH 70B or instructor consent.
3 units

ARTH 190C. 20th Century Art: from Dada to Pop

Critical investigation of modernist art from World War I to the 1960s (from Dada to Pop art) with an emphasis on painting and sculpture but some attention paid to architecture, photography, printmaking and design.

Prerequisite: ARTH 70B or instructor consent.
3 units

ARTH 191A. Issues in Contemporary Art

A critical investigation of a theme which bears on the arts from mid-century to the present, looking closely at major artists and trends in order to understand their philosophies, objectives, styles, and contexts. Course is repeatable for a total of 6 units.

Prerequisite: ARTH 70B.
Repeatable for credit

3 units

ARTH 191B. Women in Art

Contributions made to Western culture by women involved in the arts from the Middle Ages to the present and the influence on art of attitudes held about women.

Prerequisite: ARTH 70B or instructor consent.
3 units

ARTH 192A. Modern Design

History of design philosophy and practice from the Industrial Revolution to the present including Art Nouveau and Art Deco, the Bauhaus, International Style, Functionalism vs. Formalism, Post-Modern and Deconstructivism.

Prerequisite: ARTH 72 or instructor consent.
3 units

ARTH 192B. Modern Architecture

Development of modern architecture from the late 19th century to the present, including Richardson, Sullivan, Wright, Le Corbusier, the Bauhaus, Mies van der Rohe, Meier and Gehry.

Prerequisite: ARTH 70B, ARTH 72 or instructor consent.
3 units

ARTH 192C. History of Interior Design

Survey of interior design through historical, political, social, economic, technological, and aesthetic factors that shape the built environment. Design will be analyzed formally and through parallel developments in the arts.

Prerequisite: ARTH 70B or ARTH 72 or instructor consent.
3 units

ARTH 193A. Worlds of Art and Culture

Focuses on the use of art images as primary sources for the study of cultural development in a globalized context and ways in which past cultures and their interactions influence the modern world.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: V
3 units

ARTH 193B. East Meets West in Art

Comparative study of Eastern and Western art. Emphasis on cross-fertilization. Historical and cultural backgrounds. Includes lectures, discussions and presentations. Research or art project and paper required.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing; one art history course. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: V
3 units

ARTH 194A. Art of China

Architecture, sculpture and painting in China from prehistoric times to the Republic.

Prerequisite: Upper division standing or instructor consent.
3 units

ARTH 194B. Art of India and South East Asia

Major artifacts of South Asia and Southeast Asia, including India, Ceylon, Burma, Thailand, Cambodia, Vietnam and Indonesia.

Prerequisite: Upper division standing or instructor consent.
3 units

ARTH 195. Art of Japan

Architecture, sculpture and painting in Japan from prehistoric times to Edo era.

Prerequisite: Upper division standing or instructor consent.
3 units

ARTH 197A. The Art of Africa

Major art styles of Africa. Traditional tribal styles of the Sub-Saharan region. Paintings, sculpture and artifacts from ancient times to the contemporary.

Prerequisite: Upper division standing or instructor consent.
3 units

ARTH 198. Art History and Multimedia

Working with traditional as well as interactive computer techniques for locating and presenting art historical materials.

Prerequisite: Three courses in art history and upper division standing in art history, digital media art, graphic design or instructor consent.
Lab 9 hours.
Repeatable for credit
3 units

GRADUATE**ARTH 270. Seminar in Ancient Art**

Directed group research in area of Egyptian, Mesopotamian, Minoan-Mycenaean, Greek, Etruscan or Roman Art History on topic designated by instructor. Research projects required. Course is repeatable for credit when course content changes.

Prerequisite: At least two upper division art history courses or instructor consent.
Repeatable for credit
3 units

ARTH 271. Seminar in Medieval Art

Directed group research in area of European Medieval art history on topic designated by instructor. Research projects required. Course is repeatable for credit when course content changes.

Prerequisite: At least two upper division art history courses or instructor consent.
Repeatable for credit
3 units

ARTH 272. Seminar in Renaissance Art

Directed group research in area of European art history of Renaissance period on topic designated by instructor. Research project required. Course is repeatable for credit when course content changes.

Prerequisite: At least two upper division art history courses or instructor consent.
Repeatable for credit
3 units

ARTH 273. Seminar in Baroque Art

Directed group research in area of European or Latin American art history of Baroque period on topic designated by instructor. Research projects required. Course is repeatable for credit when course content changes.

Prerequisite: At least two upper division art history courses or instructor consent.
Repeatable for credit
3 units

ARTH 274. Seminar in Nineteenth Century Art

Directed group research in area of European or American art of nineteenth century on topic designated by instructor. Research projects required. Course is repeatable for credit when course content changes.

Prerequisite: At least two upper division art history courses or instructor consent.
Repeatable for credit
3 units

ARTH 275. Seminar in Twentieth Century Art

Directed group research in area of European or American art of twentieth century on topic designated by instructor. Research projects required. Course is repeatable for credit when course content changes.

Prerequisite: At least two upper division art history courses or instructor consent.
Repeatable for credit
3 units

ARTH 276. Seminar in Oriental Art

Directed group research in area of Asian art on topic designated by instructor. Research projects required. Course is repeatable for credit when course content changes.

Prerequisite: At least two upper division art history courses or instructor consent.
Repeatable for credit
3 units

ARTH 277. Seminar in Historiography

Directed group research in theories and methodologies of art history. Research projects required. Course is repeatable for credit when course content changes.

Prerequisite: At least two upper division art history courses or instructor consent.
Repeatable for credit
3 units

ARTH 278. Seminar in Myth and Symbol

Directed group research in sources and meanings of myths and symbols. Research projects required.

Prerequisite: At least two upper division art history courses or instructor consent.
Repeatable for credit
3 units

ARTH 279. Seminar in Interdisciplinary Studies

Directed group research in examination of relationship of art history to other academic disciplines on topic designated by instructor. Research projects required. Course is repeatable for credit when course content changes.

Prerequisite: At least two upper division art history courses or instructor consent.
Repeatable for credit
3 units

ARTH 290. Multimedia Projects in Arts and Humanities Studies

Project-oriented course allowing advanced students from a variety of disciplines to work together to create interactive multimedia projects.

Prerequisite: Senior or graduate standing or instructor consent.
Repeatable for credit
3 units

ARTH 291. Graduate Problems in Art History

Independent studies on a focused research project.

Repeatable for credit
3 units

ARTH 295. Seminar in Art History

Directed group research in an area of the history of art designated by the instructor and published in the schedule of classes. The seminar will be conducted by various members of the art history staff within their areas of specialization.

Prerequisite: Instructor consent.
Repeatable for credit
3 units

GENERAL DESIGN

UPPER DIVISION**DSGN 127. Internship**

Experience in the methods and procedures employed by professional designers in consulting offices and corporate design departments. Professional responsibilities in local design offices on a weekly basis. Course is repeatable for a total of 6 units.

Prerequisite: DSIT 104 or DSGD 106, DSID 123 or DSID 124.
Repeatable for credit
Credit / No Credit
1-4 units

DSGN 148. Computers in Urban Design

See URBP 148.

3 units

DSGN 180. Individual Studies

Special topics or projects by arrangement with faculty.

Prerequisite: Art and design majors with upper division standing.
Repeatable for credit
Credit / No Credit
1-3 units

DSGN 197. BA Senior Project

In-depth study of current issues in the design fields. Utilizes interdisciplinary approaches and concepts to provide a capstone experience for the general design student.

Prerequisite: 12 units of course work in the area of emphasis.
Activity 6 hours.
Offered only occasionally.
3 units

GRADUATE**DSGN 206. Seminar in Design**

An analysis of decorative, structural and functional design.

Prerequisite: Classified status in art or instructor consent.
Repeatable for credit
3 units

DSGN 248. Advanced Computers in Urban Design

See URBP 248.

3 units

GRAPHIC DESIGN

LOWER DIVISION**DSGD 083. Digital Applications: Basics**

The fundamental use of features and functions inherent within graphic software programs for graphic design.

Prerequisite: ART 12, ART 24.
3 units

DSGD 099. Introduction to Typography

Study and demonstration of letterforms and fundamental typographic principles. Emphasis on the vocabulary of typographic form and its relationship to message/purpose.

Prerequisite: ART 12, ART 14, ART 24, DSGD 83, (industrial design majors may substitute DSID 22 for ART 14; interior design majors may substitute ART 13 for ART 12).
Repeatable for credit
3 units

UPPER DIVISION**DSGD 102. Intermediate Typography**

Application of typographic principles to a diverse series of graphic design problems utilizing text and display letterforms, organizational systems, fundamental design theories and conceptual innovation.

Prerequisite: Pass portfolio review.
3 units

DSGD 103A. Advanced Typography

Advanced conceptual investigations, verbal and visual problem solving utilizing typography and image.

Prerequisite: Pass portfolio review; DSGD 102.
Repeatable for credit
3 units

DSGD 103B. Advanced Typography

Capstone conceptual investigations, verbal and visual problem solving utilizing typography and image.

Prerequisite: DSGD 103A.
3 units

DSGD 104. Introduction to Graphic Design

Familiarization to form and message development. Emphasis on visual concepts and fundamental design theory. Course is repeatable for a total of 6 units.

Prerequisite: ART 12, ART 14, ART 24, ART 26 or DSID 21, DSGD 83.
Repeatable for credit
3 units

DSGD 105. Intermediate Graphic Design

Development of concepts combining image/form, message, typography and function with fundamental design theory. Course is repeatable for a total of 6 units.

Prerequisite: Admission by portfolio review and a grade of "B" or above in DSGD 104.
Repeatable for credit
3 units

DSGD 106. Advanced Graphic Design

Advanced and diverse series of topics confronting a wide variety of situations and needs emphasizing conceptual innovation, organization, planning and analysis.

Prerequisite: Pass portfolio review.
3 units

DSGD 107A. Special Topics in Graphic Design

Comprehensive design problems utilizing design theories, analysis, experimentation, innovation and conceptual development as systematic approaches to structuring information architecture; database visualization, hypertext media, and motion graphics.

Prerequisite: BFA portfolio review, DSGD 102, DSGD 106 and DSGD 186.
Lab 6 hours.
3 units

DSGD 107B. Special Topics in Experience Design

Capstone design problems utilizing design methodologies, theories, and analysis in the area of time-base multi-media design; narrative filming, kinetic typography in motion, interaction design, and event design as related to visual information design.

Prerequisite: Admission to pass portfolio review.
DSGD 107A.
Lab 6 hours.
3 units

DSGD 108. Graphic Design Portfolio

Portfolio preparation using various media and methods for effective professional presentation.

Prerequisite: DSGD 103A, DSGD 106 and DSGD 107.
3 units

DSGD 176A. Graphic Design History and Theory

See ARTH 176A.
3 units

DSGD 186. Digital Applications: Methodology

Advanced technical applications in the tools and methods used in digital text and image production for print and on-line delivery.

Prerequisite: Pass BFA Graphic Design portfolio review or instructor consent.
Lab 6 hours.
3 units

INDUSTRIAL DESIGN

LOWER DIVISION**DSID 021. Visualization I**

Presenting design concepts in both preliminary and finished states. Appraisal and application of media used in industry. Includes elements of color theory.

3 units

DSID 022. Visualization II

Sketching techniques commonly used by designers for communicating their concepts.

Prerequisite: DSID 21, DSID 31.
Repeatable for credit
3 units

DSID 031. Industrial Design Foundation I

Practical exploration of the basics of industrial design aesthetics. Introduction to the design process with special emphasis on 3D form development and presentation.

Corequisite: DSID 21.
Repeatable for credit
3 units

DSID 032. Industrial Design Foundation II

Development and application of basic industrial design skills, methodology and aesthetics to elementary product design. Project assignments leading from abstract exercises to actual product design.

Prerequisite: DSID 21, DSID 31.
Repeatable for credit
2 units

DSID 032A. ID Portfolio Project I

ID portfolio project class combines 2D and 3D skills from previous ID classes, in the first complete product design application. Complete presentation for ID faculty review required.

Repeatable for credit
Credit / No Credit
1 unit

DSID 040. Product Design I

See TECH 040.

Repeatable for credit
3 units

UPPER DIVISION**DSID 121. Industrial Design Process**

Explores how a conscious and rational approach can enhance creativity. Techniques used include goalsetting, brainstorming, time-management, evaluation matrices and journal keeping.

Prerequisite: Pass portfolio review.

3 units

DSID 123. Intermediate Industrial Design

Design theories, methods and presentation techniques used by product designers in small scale product design. Stress application of knowledge of ergonomics, industrial materials and manufacturing processes. Course is repeatable for total of 6 units.

Prerequisite: ART 13, ART 24 or ART 25, DSID 32A, DSID 21, DSID 22, DSID 31, DSID 32; PHYS 1; ARTH 70A or ARTH 70C; ARTH 70B.

Repeatable for credit

3 units

DSID 123A. ID Portfolio Project 2

Provides instruction on integrating ergonomics, CAD, and typography into intermediate ID Projects. Comprehensive presentation for ID faculty required.

Prerequisite: DSID 32A, DSID 126, DSGD 99, TECH 120.

Repeatable for credit

Credit / No Credit

1 unit

DSID 124. Design for All

Designing for as broad a percentage of the population as possible. Course focuses on accessible design despite physical, cognitive and/or socioeconomic obstacles. Course is repeatable for a total of 6 units.

Prerequisite: Credit for DSID 32A Portfolio Review.

Prerequisite: Pass portfolio review.

Lab 9 hours.

Repeatable for credit

3 units

DSID 125. Advanced Industrial Design

Advanced exploration of industrial design theory and practice with projects involving high levels of complexity of technological, functional and aesthetic constraints. Course is repeatable for a total of 6 units.

Prerequisite: DSGD 99, DSID 123 (6 units), DSID 123A, DSID 126, DSID 176, TECH 103, TECH 120.

Lab 9 hours.

Repeatable for credit

3 units

DSID 125A. ID Portfolio Project 3

Class requires integration of advanced computer graphics and technology knowledge in the advanced ID Projects, comprehensive presentation for ID faculty and invited professionals required.

Prerequisite: DSID 123A, DSID 129, DSID 176, TECH 103, TECH 143.

Repeatable for credit

Credit / No Credit

1 unit

DSID 126. Ergonomics for Design

Aspects of products affecting human performance, comfort and safety. Emphasis on design of computer interfaces, automobiles and furniture. Topics include visual displays, anthropometry, seating design and safety design.

Prerequisite: Pass portfolio review.

3 units

DSID 128. Advanced Projects in Industrial Design

Comprehensive, in-depth analysis and design of faculty-assigned projects as well as a student-proposed project. Student proposed projects must meet with the approval of the Industrial Design faculty.

Prerequisite: DSID 121, DSID 125A, DSID 129, DSGN 127 or instructor permission.

Lab 9 hours.

Repeatable for credit

3 units

DSID 128A. ID Portfolio Project 4

Class requires integration of business and advanced technologies into the special graduating project. Final show and presentation for ID faculty and invited professionals required.

Prerequisite: DSID 125A, DSID 121, BUS 130, BUS 136 or equivalent.

Repeatable for credit

Credit / No Credit

1 unit

DSID 129. Visualization III

Principles of computer graphics, computer-aided technology and applications in industrial design. Emphasis on the transition from 2D applications to 3D applications.

Prerequisite: DSID 22, DSID 32, DSID 32A credit.

Repeatable for credit

3 units

DSID 130. Sustainable Design

Design products with a focus on minimizing their impact on the environment. The entire lifespan of designed and manufactured products will be explored. Course is repeatable for credit for a total of 6 units.

Prerequisite: Credit for DSIS 32A Portfolio Review.

Offered only occasionally.

Repeatable for credit

3 units

DSID 131. Interactive and Interface Design

Advanced practical applications of interactive design theory, involving hardware and software/human interface. Emphasis on computer-related interface design.

Prerequisite: BS Industrial Design or BS Graphic Design Majors, DSID 126.

Repeatable for credit

3 units

DSID 132. Softgoods

Design of products that incorporate soft materials and textiles in their construction. Products include furniture, clothing, shoes, and other products that contribute to current lifestyles.

Prerequisite: DSID 32A credit or instructor permission.

Repeatable for credit

3 units

DSID 133. Design Projects: Making It

Students take an idea from concept to actual product (and multiples of the product) in one semester. The course ends with the creation of a store and the sale of the products produced.

Prerequisite: DSID 32A credit or instructor permission.

Repeatable for credit

3 units

DSID 135. Design, Entrepreneurship, Intellectual Property and Professional Practice

Strategies for entering the profession as a business owner or design entrepreneur. Course includes the exploration of past and future business models as well as issues of intellectual property protection.

Prerequisite: DSID 125A credit or instructor permission.

Repeatable for credit

3 units

DSID 136. Advanced Digital Workshop

Advanced Digital modeling and prototyping tools for Industrial Design.

Prerequisite: DSID 32A credit, DSID 129 or instructor permission.

Repeatable for credit

3 units

DSID 137. Advanced Physical Prototyping

Advanced Prototyping techniques for Industrial Design including patternmaking, sewing and casting.

Prerequisite: DSID 123A credit or instructor permission.

Repeatable for credit

3 units

DSID 140. Product Design II

See TECH 140.

Repeatable for credit

3 units

DSID 141. Product Design III

See TECH 141.

3 units

DSID 176B. Industrial Design in Society

See ARTH 176B.

3 units

GRADUATE**DSID 226. Ergonomics for Design**

Aspects of products which affect human performance, comfort and safety. Emphasis on design of computer interfaces, automobiles and furniture. Topics include visual displays, anthropometry, seating design and safety design.

Prerequisite: Graduate standing or pass BS Design portfolio review.

3 units

INTERIOR DESIGN**LOWER DIVISION****DSIT 015. Architectural Drawing and 3-D Modeling**

Study, exploration and comprehensive development of the technical and conceptual aspects of architectural drawing and architectural modelmaking used to visualize innovative and functional interior spaces.

Prerequisite: ART 12 or ART 13; ART 24 and TECH 27.

3 units

DSIT 027. Fundamentals of Architectural Graphics

See TECH 027.

3 units

DSIT 029. Design Process

Study, exploration and comprehensive development of theoretical and conceptual methodologies used to formulate innovative and functional interior spaces.

Prerequisite: DSIT 15.
3 units

DSIT 033. Architectural Presentation

Further study, exploration, and comprehensive development of the technical and conceptual aspects of architectural drawing and modelmaking used to visualize innovative and functional interior spaces.

Prerequisite: DSIT 15.
3 units

DSIT 034. Interior Architecture Foundation Studio

In-depth study, exploration, and comprehensive development of innovative and functional interior spaces using the technical and conceptual aspects of architectural drawing and architectural modelmaking and the theoretical and conceptual methodologies used to formulate interior spaces.

Prerequisite: DSIT 15, DSIT 29, DSIT 33 and TECH 27.
3 units

DSIT 080. The Applied Arts in Interior Design

See ARTH 080.

3 units

DSIT 098. Architectural Forum

Discussion and analysis of the processes of interior architecture; lectures and field trips emphasizing critical thinking, communication skills and professional ethics.

Prerequisite: ART 1.
3 units

UPPER DIVISION**DSIT 102. Computer Graphics for Interior Architecture**

Examination of programs related to the development of state of the art presentation methods and portfolios.

Prerequisite: DSIT 34.
3 units

DSIT 103. Interior Architecture Conceptual Design Studio

Project oriented study, examination, and analysis of planning and designing innovative and functional interior spaces. Emphasis on the conceptual design of state of the art commercial environments. Additional emphasis on implementation and interpretation of laws, codes and regulations.

Prerequisite: DSIT 34, DSIT 102.
3 units

DSIT 104. Interior Architecture Space Planning Studio

Further project-oriented study, examination and analysis of planning and designing innovative and functional interior spaces. Emphasis on the space planning of state of the art commercial environments. Additional emphasis on implementation and interpretation of laws, codes and regulations. Course is repeatable for a total of 6 units.

Prerequisite: DSIT 103 and pass portfolio review.
Repeatable for credit
3 units

DSIT 105. Interior Architecture Advanced Design Studio

In-depth project oriented study, examination and analysis of planning and designing innovative and functional interior spaces. Emphasis on the advanced design of state of art commercial environments. Additional emphasis on implementation and interpretation of laws, codes and regulations.

Prerequisite: DSIT 103, and pass portfolio review.
3 units

DSIT 106. Architectural Project Materials

Discussion and analysis of materials for interior architecture lectures and field trips emphasizing aesthetic sensibilities, human factors, manufacturing processes and specifications.

Prerequisite: DSIT 34.
3 units

DSIT 107. Furniture Design

Design and production of original furniture, including drawing, prototypes and materials selection. Course is repeatable for a total of 6 units.

Prerequisite: DSIT 105 or upper division standing and instructor consent.

Repeatable for credit
3 units

DSIT 108. Architectural Lighting Design

Theory and practice of architectural lighting emphasizing aesthetics, drawing, specifications, terminology, calculations and advances in technology. Course is repeatable for a total of 6 units.

Prerequisite: DSIT 103, DSIT 104 or upper division standing and instructor consent.

Repeatable for credit
3 units

DSIT 109. Object Design for Interiors

Advanced exploration of object design theory and practice with projects involving high levels of aesthetic and functional complexity.

Prerequisite: DSIT 105, DSIT 106 and DSIT 108.
3 units

DSIT 111. Interior Architecture Seminar

A capstone course for discussion of design work and professional values as a basis for portfolio and resume preparation.

Prerequisite: DSIT 105 and enrollment in graduation semester.
3 units

DSIT 116. Solar Energy Theory and Applications

See ENVS 116.
3 units

DSIT 128. Architectural Structures

See TECH 128.
3 units

DSIT 132. Solar Home Design

See ENVS 132.
3 units

DSIT 151. Introduction to Urban Design

See URBP 151.
3 units

DSIT 152. Introduction to Urban Design Studio

See URBP 152.
Repeatable for credit
3 units

DSIT 192C. History of Interior Design

See ARTH 192C.
3 units

PHOTOGRAPHY**LOWER DIVISION****PHOT 040. Beginning Photography**

Basic principles of photographic practices including both technical and aesthetic issues.

CAN ART 18
3 units

UPPER DIVISION**PHOT 110. Intermediate Photography**

Theory, practice and aesthetic investigations of photography: improved photo skills, print quality and introduction to non-traditional techniques.

Prerequisite: PHOT 40.
3 units

PHOT 112. Color Photography

Theory, practice and aesthetic investigations of color photography: lighting, filters, chemical and digital processes.

Prerequisite: PHOT 40.
3 units

PHOT 113. Alternative Photo Media

Theory, practice and aesthetic investigations of alternative photographic media. Course is repeatable once for credit.

Prerequisite: PHOT 111, PHOT 128 or instructor consent.
Repeatable for credit
3 units

PHOT 114. Advanced Black and White Photography

Advanced theory, practice and aesthetic investigation of black and white photography through demonstrations of camera and laboratory techniques. Course is repeatable once for credit.

Prerequisite: PHOT 111, PHOT 128 or instructor consent.
Repeatable for credit
3 units

PHOT 115. Digital Photography

Advanced theory, practice and aesthetic investigations of digital imaging techniques. Emphasis upon avenues of expression not available through traditional photo processes. Course is repeatable once for credit.

Prerequisite: PHOT 40, PHOT 112 or instructor consent.
Lab 6 hours.
Repeatable for credit
3 units

PHOT 116. Contemporary Issues in Photography

Examination and discussion of aesthetic trends and philosophies in photography and related media, their impact on the medium and society.

Prerequisite: PHOT 126 or instructor consent.
3 units

PHOT 120. Photo Image and Idea

Intermediate course relating image to idea. Independent work and group interaction through critique, lectures, field trips, etc.

Prerequisite: PHOT 110.
3 units

PHOT 121. Photographic Lighting Techniques

Concepts and principles of lighting using both daylight and incandescent light sources and the use of standard studio lighting equipment.

Prerequisite: PHOT 112.
3 units

PHOT 122. Product Photography

The technical and conceptual aspects of product photography with emphasis on design, lighting, visual impact and clarity of purpose. Course is repeatable once for credit.

Prerequisite: PHOT 121.

Repeatable for credit

3 units

PHOT 123. Photographic Illustration

The technical and conceptual aspects of producing effective photographic illustrations for various narrative purposes (e.g. advertisements, magazines, story illustrations, poster, etc.). Course is repeatable once for credit.

Prerequisite: PHOT 121.

Repeatable for credit

3 units

PHOT 125. Advanced Photographic Media

Advanced course in use of emerging photographic imaging techniques. Emphasis upon relating these new technologies to ongoing work developed in previous classes. Energies directed toward a balance of assertive imagery, appropriate craft and perception.

Prerequisite: PHOT 112, PHOT 113, PHOT 115.

Repeatable for credit

3 units

PHOT 126. History of Photography

See ARTH 126.

3 units

**PHOT 129. Professional Practices
in Photography**

Designed to prepare graduating photo majors for practicing their profession. Emphasis will be placed on building a comprehensive portfolio and business identity. Course is repeatable once for credit.

Prerequisite: PHOT 120, PHOT 121, plus two additional upper division photography courses.

Repeatable for credit

3 units

PHOT 180. Individual Studies

Individual work under guidance in field of special interest.

Prerequisite: PHOT 110.

Repeatable for credit

Credit / No Credit

1-3 units

PHOT 197. BA Senior Project Photography

Advanced course relating image to idea. Creation of photo-based project consisting of new work determined by the student.

Prerequisite: 15 units of upper division courses in emphasis.

Repeatable for credit

3 units

Asian Studies

College of Humanities and the Arts

Clark Hall 419
408-924-4465

Professors

Christian Jochim, Coordinator

Curricula

Minor, Asian Studies

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
Choose six to nine units from at least two of: 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
Choose six to nine units from at least two of: 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

Courses

ASIAN STUDIES

LOWER DIVISION

ASIA 019. Music in World Cultures

See MUSC 019.
GE: C1
3 units

ASIA 070B. Eastern Religions

See RELS 070B.
GE: C2
3 units

ASIA 070C. Arts of Asia

See ARTH 070C.
GE: C1
3 units

UPPER DIVISION

ASIA 102. Chinese Culture

See CHIN 102.
3 units

ASIA 104. Asian Philosophy

See PHIL 104.
GE: V
3 units

ASIA 107. History of Southeast Asia

See HIST 107.
3 units

ASIA 109A. History of China

See HIST 109A.
3 units

ASIA 109B. History of China

See HIST 109B.
3 units

ASIA 110A. History of Japan

See HIST 110A.
3 units

ASIA 110B. History of Japan

See HIST 110B.
3 units

ASIA 114. Legacy of Asia

See HUM 114.
GE: V
3 units

ASIA 115. The Emerging Global Culture

See ANTH 115.
GE: V
3 units

ASIA 122. English as a World Language

See LING 122.
GE: V
3 units

ASIA 133B. Relationship Marketing: Pacific Rim

See BUS 133B.
3 units

ASIA 140. Chinese Culture and Politics Through Literature

See CHIN 140.
GE: V
3 units

ASIA 142. Contemporary Buddhism and its Roots

See RELS 142.
3 units

ASIA 143. Spiritual Traditions of India

See RELS 143.
3 units

ASIA 144. Chinese Traditions

See RELS 144.
3 units

ASIA 145. Asian Politics

See POLS 145.
3 units

ASIA 148B. Improvisational Traditions of the World – Asia

See MUSC 148B.
Repeatable for credit
2 units

ASIA 148C. Improvisational Traditions of the World – Modal Traditions

See MUSC 148C.
Repeatable for credit
2 units

ASIA 160. East and South Asia

See GEOG 160.
3 units

ASIA 177. Anthropology of Asia

See ANTH 177.
Repeatable for credit
3 units

ASIA 193B. East Meets West in Art

See ARTH 193B.
GE: V
3 units

ASIA 194A. Art of China

See ARTH 194A.
3 units

ASIA 194B. Art of India and South East Asia

See ARTH 194B.
3 units

ASIA 195. Art of Japan

See ARTH 195.
3 units

Athletics (Intercollegiate)

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

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.

Courses**Intercollegiate Athletics****Lower Division****ATH 002I. Men's Baseball**

Repeatable for credit
1 unit

ATH 002S. Men's Skills Development, Baseball

Repeatable for credit
Credit / No Credit
1 unit

ATH 004I. Men's Basketball

Repeatable for credit
1 unit

ATH 004S. Men's Skills Development, Basketball

Repeatable for credit
Credit / No Credit
1 unit

ATH 006I. Women's Basketball

Repeatable for credit
1 unit

ATH 006S. Women's Skills Development, Basketball

Repeatable for credit
Credit / No Credit
1 unit

ATH 012I. Football

Repeatable for credit
1 unit

ATH 012S. Skills Development, Football

Repeatable for credit
Credit / No Credit
1 unit

ATH 014I. Men's Golf

Repeatable for credit
1 unit

ATH 014S. Men's Skills Development, Golf

Repeatable for credit
Credit / No Credit
1 unit

ATH 016I. Women's Golf

Repeatable for credit
1 unit

ATH 016S. Women's Skills Development, Golf

Repeatable for credit
Credit / No Credit
1 unit

ATH 020I. Women's Gymnastics

Repeatable for credit
1 unit

ATH 020S. Women's Skills Development, Gymnastics

Repeatable for credit
Credit / No Credit
1 unit

ATH 026I. Women's Tennis

Repeatable for credit
1 unit

ATH 026S. Women's Skills Development, Tennis

Repeatable for credit
Credit / No Credit
1 unit

ATH 030I. Men's Soccer

Repeatable for credit
1 unit

ATH 030S. Men's Skills Development, Soccer

Repeatable for credit
Credit / No Credit
1 unit

ATH 032I. Softball

Repeatable for credit
1 unit

ATH 032S. Skills Development, Softball

Repeatable for credit
Credit / No Credit
1 unit

ATH 034I. Women's Swimming

Repeatable for credit
1 unit

ATH 034S. Women's Skills Development, Swimming

Repeatable for credit
Credit / No Credit
1 unit

ATH 036I. Women's Volleyball

Repeatable for credit
1 unit

ATH 036S. Women's Skills Development, Volleyball

Repeatable for credit
Credit / No Credit
1 unit

ATH 042I. Women's Cross Country

Repeatable for credit
1 unit

ATH 042S. Women's Skills Development, Cross Country

Repeatable for credit
Credit / No Credit
1 unit

ATH 044I. Women's Soccer

Repeatable for credit
1 unit

ATH 044S. Women's Skills Development, Soccer

Repeatable for credit
Credit / No Credit
1 unit

ATH 046I. Women's Water Polo

Repeatable for credit
1 unit

ATH 046S. Women's Skills Development, Water Polo

Repeatable for credit
Credit / No Credit
1 unit

ATH 048I. Men's Cross Country

Repeatable for credit
1 unit

ATH 048S. Men's Skills Development, Cross Country

Repeatable for credit
Credit / No Credit
1 unit

Aviation

College of Engineering

Industrial Studies 111

408-924-3190

408-924-3198 (Fax)

aviation@email.sjsu.edu

www.engr.sjsu.edu/avtech

Assistant Professors

Wenben Wei

Curricula

■ BS, Aviation

■ Minor, Aviation

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.

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 coursework taken at San José State University and a 2.0 average in all coursework 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 coursework 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
<i>Choose one of the following options.</i>	
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 (47); CS 049C or CMPE 046 (3)	
Maintenance Management: In order to complete this option, a student must complete one of the AS-level programs at a local community college.	
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.

Courses

AVIATION

LOWER DIVISION

AVIA 002. Introduction to Aviation

Concepts, responsibilities, and professional ethics of an aviation professional. History of aviation, FAA certification, qualifications and privileges of aviation professionals. Career opportunities, career paths and progression.

3 units

AVIA 031. Aircraft Theory and Design

Aerodynamics and aeroelastics force. Load analysis of flight vehicles. Aircraft design optimization, material selection along with, safe-life, fail-safe and damage tolerance in design.

Prerequisite: PHYS 2A, MATH 71.

Lecture 2 hours/Lab 3 hours.

3 units

AVIA 042. Aircraft Systems

Operational and analytical aspects of key aircraft systems such as propulsion, flight control, electrical, and hydraulic. Reliability and maintainability concepts related to the design of aircraft systems. Emphasis is placed on general aviation aircraft.

Prerequisite: PHYS 2A, AVIA 2.

Lecture 2 hours/lab 3 hours.

3 units

AVIA 043. Propulsion Theory

Propulsion theory of piston engines. Aircraft fuel systems and components. Fundamental systems, maintainability, and reliability methods. Aviation regulations related to engines. Maintenance cycles for engines and components.

Prerequisite: PHYS 2A.

Lecture 2 hours/lab 3 hours.

3 units

AVIA 068. Avionics and Airborne Communication

Communications and navigation systems installed on a typical general aviation aircraft. History of avionics. Laboratory exercises will include field-testing and airworthiness evaluation.

Pre/corequisite: AVIA 42.

Lecture 2 hours/lab 3 hours.

3 units

AVIA 073. Air Traffic Control

Air Traffic Control System Structure and Communications. Current configuration and future design of the National Airspace System. Oceanic and International Air Traffic Control. Automation issues and Emerging Technologies.

Prerequisite: AVIA 2.

3 units

AVIA 078. Introduction to Aviation Management

History of aviation management. Safety, security, community relations, aviation unions, and private and governmental relationships. National Airspace System. Future Airspace System. International airspace systems.

3 units

AVIA 091. Aircraft Turbine Engines

A study of gas turbine fundamentals, including various gas turbine cycles, components and component efficiency, thrust, specific fuel consumption, duct flow and inlet diffuser, centrifugal and axial compressors, combustion chambers and jet nozzles for aircraft propulsion.

Prerequisite: AVIA 43.

3 units

UPPER DIVISION

AVIA 128. Aviation Safety and Security

Safety in aviation design, operation, and maintenance; hazardous materials; airport environment issues; security regulations for aviation.

Prerequisite: AVIA 2.

3 units

AVIA 141. Human Factors in the Aviation Environment

See BIOL 141.

3 units

AVIA 168. Avionics and Microwave Systems

Avionics digital and microwave systems. Microwave theory and radar with application to airborne systems. On-board navigation and display systems including computer-based components, digital avionics buses, flight management systems, EFIS, and EICAS.

Prerequisite: AVIA 68, TECH 62, TECH 63.

3 units

AVIA 169. Avionic System Integration

Avionic System integration in current aircraft. Avionics package design, aircraft mainframe effects on design, FAA regulations and certification. Heads-up displays and surveillance systems including weather radar, radar altimeter, transponder, TCAS, and GPWS.

Prerequisite: AVIA 168.

Lecture 2 hours/lab 3 hours.

3 units

AVIA 173. Aviation Law

Law and legal issues in aviation from both a national and international perspective. Rights and responsibilities of individuals, organizations, and the aviation community. Regulations and liability pertaining to the design, manufacture, operation and maintenance of aircraft.

Prerequisite: AVIA 78.

3 units

AVIA 176. Airline Operations and Management

Aspects of managing air transportation companies. Integration of technical, environmental, market and regulatory considerations in the decision-making process in airline management. Future planning techniques.

Prerequisite: AVIA 78, BUS 140.

3 units

AVIA 177. General Aviation Operations and Management

Aspects of managing general aviation companies, such as the structure of the general aviation industry, supply and demand of products, and technical and regulatory constraints.

Prerequisite: AVIA 78, BUS 140.

3 units

AVIA 178. Airport Planning and Management

Design, planning, and management of airports in the US including airport development and airport design. Legal responsibilities as an airport manager. Issues and regulations applicable to airport planning and management.

Prerequisite: AVIA 78.

3 units

AVIA 179. Advanced Airport Planning and Management

Noise generation and abatement. Leasing and property management including the impact of federal regulations. Concession planning. Use of technology to increase efficiency and security in airports.

Prerequisite: AVIA 78.

3 units

AVIA 180. Individual Studies

Special topics by arrangement. Course is repeatable for a maximum of 3 units.

Prerequisite: Aviation majors or minors after advisor consultation and department chair approval.

Repeatable for credit

Credit / No Credit

1-3 units

AVIA 180H. Individual Studies

Individual honors studies by arrangement. Course is repeatable for maximum of 2 units.

Prerequisite: Acceptance into Aviation Honors Program.

Repeatable for credit

Credit / No Credit

1-2 units

AVIA 190. Senior Capstone Seminar

Current industry analysis and career development; leadership skills for an aviation professional. Aviation standard procedures. Ethical principles for Aviation. Student projects related to Aviation major.

Prerequisite: Graduating senior, major form completed.

3 units

AVIA 191. International Flight Navigation and Planning in the Corporate Environment

Navigation and flight planning skills for the corporate international flight department. Demands placed on the pilot including long-range navigation, flight planning, interpreting adverse weather forecasts, aircraft systems, international navigational regulations and communications.

Prerequisite: AVIA 2, upper division standing.

3 units

AVIA 192. Instrument Flight Techniques

Flight procedures, radio navigation, air traffic control, use of instrument charts. Flight simulator exercises on instrument flight maneuvers, departure and approach procedures.

Prerequisite: AVIA 2.

Lecture 2 hours/lab 3 hours.

3 units

AVIA 193. Aerodynamics

Aerodynamic forces involved in an airplane in flight. Fundamental flowing gas, incompressible and compressible flow, Bernoulli's Principles, circulation forces, boundary layer, airfoils, measurement methods, laminar and turbulent flow, force and vortex interactions.

Prerequisite: PHYS 2A, MATH 71, AVIA 31.

Lecture 2 hours/Lab 3 hours.

3 units

AVIA 194. Pilot Avionics and General Aviation Systems

Operations of avionics as found on modern general aviation aircraft and turboprop/turbofan aircraft. Major systems used on general aviation aircraft including GPS, FMS, navigation systems, fuel systems, hydraulic systems, environmental systems, landing gear.

Prerequisite: AVIA 42, AVIA 43.

3 units

AVIA 195. Internship with the Aviation Industry

Practical experience with aviation industry under direct supervision of aviation professionals. Experience will relate to air carrier or general aviation aircraft operation/management/maintenance, fixed-based operation management and/or airport operation/management. Course is repeatable for a maximum of 12 units.

Prerequisite: Junior standing and instructor consent.

Repeatable for credit

Credit / No Credit

1-6 units

AVIA 197. Cooperative Education Project

See ENGR 197.

3 units

AVIA 199A. Special Topics in Aviation Management

Special topics in Aviation Management. Content varies from semester to semester.

Course is repeatable for a total of 6 units.

Prerequisite: Instructor consent.

Repeatable for credit

3 units

AVIA 199B. Special Topics in Aviation Operations

Special topics in Aviation Operations. Content varies from semester to semester. Course is repeatable for a total of 6 units.

Prerequisite: Instructor consent.

Repeatable for credit

3 units

AVIA 199C. Special Topics in Avionics

Special topics in Avionics. Content varies from semester to semester. Course is repeatable for a total of 6 units.

Prerequisite: Instructor consent.

Repeatable for credit

3 units

AVIA 199D. Special Topics in Aviation Maintenance Management

Special topics in Aviation Maintenance Management. Content varies from semester to semester. Course is repeatable for a total of 6 units.

Prerequisite: Instructor consent.

Repeatable for credit

3 units

Behavioral Sciences

College of Social Sciences

Business Tower 350
408-924-5340

Curricula

- BA, Behavioral Science
- BA, Behavioral Science, Double Major in Anthropology
- BA, Behavioral Science, Double Major in Psychology
- BA, Behavioral Science, Double Major in Sociology

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.

BA – Behavioral Science (Interdepartmental)

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
Requirements in the Regular Major	46
Anthropology	12
ANTH 011 (3); ANTH 149, PSYC 018, PSYC 120 or SOCI 104 (3); Complete two or three upper division anthropology courses. A 3-unit maximum of individual studies may be applied to the degree requirements (6-9).	
Psychology	12
PSYC 001 (3); PSYC 018, PSYC 120, SOCI 104 or ANTH 149 (3); One or two additional upper division psychology courses (3-6)	
Sociology	12
SOCI 001 and SOCI 101 (6); ANTH 149, PSYC 018, PSYC 120 or SOCI 104 (3); Complete one or two upper division sociology courses (3-6).	
Statistics	3
STAT 095, SOCI 015 or SOCI 102	
Emphasis	7
ANTH 193 and two upper division courses from any one of the three areas (anthropology, psychology, or sociology).	
Electives	36
Total Units Required	120

BA – Behavioral Science, Double Major in Anthropology

Students who wish to major in both behavioral science and anthropology should pursue the following program.

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
Requirements in the Double Major	58
Anthropology	31
ANTH 011 (3); ANTH 012 or ANTH 013 (3); ANTH 131 and ANTH 191 (6); ANTH 149, ANTH 155 or ANTH 169 (3); ANTH 193 (1); Complete five additional upper division anthropology courses (a 3-unit maximum of individual studies may be applied to the degree) (15)	
Psychology	12
PSYC 001 (3); two upper division psychology courses (6); one additional upper or lower division psychology course (3)	
Sociology	12
SOCI 001 and SOCI 101 (6); two upper division sociology courses (6)	
Statistics	3
STAT 095, SOCI 015 or SOCI 102	
Electives	24
Total Units Required	120

**BA – Behavioral Science,
Double Major in Psychology**

Students who wish to major in both behavioral science and psychology should pursue the following program.

	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 Double Major	61
Psychology	34
PSYC 001, PSYC 030, PSYC 102, PSYC 110 and PSYC 120 (15); STAT 115 or PSYC 117 (3); PSYC 135, PSYC 155 or PSYC 158 (3); PSYC 139 or PSYC 154 (3); PSYC 129, PSYC 160 or PSYC 170 (3); PSYC 193 (1); One additional upper division psychology course (3); One additional upper or lower division psychology course (3)	
Anthropology	12
ANTH 011 3 Complete three upper division anthropology courses. A 3-unit maximum of individual studies may be applied to the degree..... 9	
Sociology	12
SOCI 001 and SOCI 101 (6); Complete two upper division sociology courses (6).	
Statistics	3
STAT 095	
Electives	12
Total Units Required	120

**BA – Behavioral Science,
Double Major in Sociology**

Students who wish to major in both behavioral science and sociology should pursue the following program.

	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 Double Major	58
Sociology	31
SOCI 001, SOCI 101, SOCI 104, SOCI 105 and SOCI 193 13 Complete six upper division sociology courses. 18	
Anthropology	12
ANTH 011 3 Complete three upper division anthropology courses. A 3-unit maximum of individual studies may be applied to the degree..... 9	
Psychology	12
PSYC 001 (3); Two additional upper division psychology courses (6); One additional upper or lower division psychology course (3)	
Statistics	3
SOCI 015 or SOCI 102	
Electives	12
Total Units Required	120

Biological Sciences

College of Science

Duncan Hall 254
408-924-4900

Professors

Thomas G. Balgooyen
John T. Boothby, Chair
Shannon M. Bros
David K. Bruck
Robert G. Fowler
Daniel C. Holley
Jeffrey Y. Honda
Vida C. Kenk
Joanne T. Kerr
Ruthann Kibler
Michael J. Kutilek
John O. Matson
William Murray
Rodney G. Myatt
Michael G. Sneary
Sally Veregge
Dan B. Walker
Steven J. White

Associate Professors

Tzvia Abramson
Robert J. Hyde
Elizabeth M. McGee
Leslee Parr
Sabine A. Rech
Adrian Rodriguez
Jerry J. Smith
Julio G. Soto

Assistant Professors

Susan Lambrecht
Cleber Ouverney
J. Brandon White

Curricula

- BA, Biological Sciences
- BA, Biological Sciences, Preparation for Teaching
- BA, Natural Science, Preparation for Teaching
- BA, Natural Science, Concentration in Biodiversity Stewardship
- BS, Biological Sciences, Concentration in Conservation and Organismal Biology
- BS, Biological Sciences, Concentration in Marine Biology
- BS, Biological Sciences, Concentration in Microbiology
- BS, Biological Sciences, Concentration in Molecular Biology
- BS, Biological Sciences, Concentration in Systems Physiology
- Minor, Biological Sciences
- Minor, Biological Sciences, 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

An undergraduate student in biology prepares for graduate work, for laboratory and field research and technical work, for health professions, and for K-12 teaching. This degree is also a good general college education for someone who does not plan to work as a biologist, because it prepares graduates to face challenges in environmental management and in incorporating new discoveries in molecular biology into such fields as medicine and agriculture. Graduate students prepare for careers in specialized scientific areas and in community college teaching.

Biology faculty pay special attention to students' ability to write and speak effectively, especially to non-science audiences, and to cooperate with the linguistically, culturally and ethnically diverse populations in the San José region. Employers and professional and graduate programs continually tell us how important communication and people skills are for today's scientists. The department also offers an unusually strong program in basic computer skills. All programs require strong support in chemistry, physics, math and communication courses.

The department has historical strengths in field biology, conservation and entomology as well as preparing students for health careers (clinical laboratory science, medicine, dentistry, etc.). Recent enhancements of infrastructure and instrumentation have allowed the department to expand its laboratory offerings in molecular biology,

immunology and microbiology to prepare students at all levels for careers in the local biotechnology industry. In addition to regular session BS, MS and MA degree programs in Molecular Biology and Microbiology, the new Master of Biotechnology (MBT) program (www.science.sjsu.edu/mbt) is offered through Special Sessions: it combines technical training with MBA-level business courses.

The BA – Biology can be tailored through electives to meet virtually any career goal. It is a broad introduction to all life sciences, with focus upon the breadth aspects of education. There is a special emphasis within the BA for students who want to become high school science teachers.

The Bachelor of Science 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 directions. New students are encouraged to begin in the BA and to discuss career plans with faculty advisors. There are no restrictions on changing to the BS, nor are any restrictions expected. The marine biology concentration requires at least one semester in residence at Moss Landing Marine Laboratories, usually the junior or senior year.

Many students seek careers in medicine, veterinary medicine or dentistry; however, in recent years 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 pharmaceuticals. Students concerned about environmental issues, including marine biology, seek careers in state and federal wildlife agencies and in environmental consulting. Some students specialize in entomology, clinical laboratory science (medical technology), physiological research, and through special majors, even in science writing and illustration. While the department is large, our faculty and staff genuinely care about students and their success. Students will find a personal and friendly environment.

Students from both bachelor's and master's programs are regularly accepted into professional health schools, PhD and graduate programs, teaching, industry and government research.

The department offers both the Master of Arts, the Master of Science, and the Master of Biotechnology degrees, with emphases in the specialty areas of the department. The MA culminates in written and oral examinations based upon 30 units of coursework. The MS requires both coursework and an intensive research project directed by three scientists, at least two of whom are SJSU faculty. The MBT program requires coursework in the College of Science and the MBA program in the College of Business, in addition to an internship and other business-related curriculum. Acceptance to department graduate programs is by contact with individual faculty, who agree to serve as program directors. Contact the department for additional information and the names of those directors.

At the undergraduate level, the BA – Natural Science and the BA – Biological Sciences prepare students for careers as K-12 science teachers and specialists. 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 department occupies a fairly modern seven-story building, equipped with electron microscopes, DNA fingerprinting and related molecular biology tools, extensive plant and animal collections, controlled environment rooms and a host of specialized laboratories. Space is allocated for a Biology Students Association. Other departmental student clubs meet regularly.

There are about 15 competitive departmental scholarships for students who have been enrolled for one semester or more; many are available to both undergraduates and graduate students, and a few graduate fellowships provide funds for research.

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	35
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) (Geol 1, Geol 1L recommended but not required.)	
Requirements in the Major	47
BIOL 001, BIOL 002, BIOL 003, BIOL 004, BIOL 006 and BIOL 115 (17.5); BIOL 116, BIOL 117 or BIOL 118 (3); BIOL 144 (0.5); BIOL 160 or BOT 160 (4); MICR 101 (4)... 29 BIOL 124 and BIOL 126 (4) or BOT 102 (4)..... 4 Upper division biology electives chosen with prior advisor approval..... 6 Other science electives from within or outside the College of Science, chosen with prior advisor approval..... 8	
Total Units Required	123

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	41-42
<i>Botany 102 may satisfy only one requirement.</i> BIOL 001, BIOL 002, BIOL 003, BIOL 004, BIOL 006, BIOL 144 and BIOL 115 (18); 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)..... 37-38 BIOL 124 and BIOL 126 (4) or BOT 102 (4)..... 4-5	
Electives	0-1
Total Units Required	123

BA – Natural 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 Natural 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 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 76-85

Reading, Language and Literature .. 18-21

ENGL 001A, ENGL 001B and ENGL 112A (9); ENGL 103 or LLD 107 (3); LLD 108, COMM 045 and EDEL 108E (9) 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); SOCS 137, SOCS 138 and SOCS 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 (6) or CHAD 149 (3)

Human Development 3-6

PSYC 082 and CHAD 067 (6) or CHAD 060 (3)

Natural Science Concentration 24

BIOL 001, BIOL 002, BIOL 005, BIOL 100W, BIOL 104A, BIOL 104B, GEOL 105 and SCED 175

Electives 3-12

Total Units Required 120

BA – Natural 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 34-37

PYS 001, PYS 001L, GEOL 004L and GEOL 006 or PYS 002A and PYS 002B (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 120, COMM 146, ENGL 106 or ENGL 107 (3); ECON 107 or ENVS 124 (3);

Complete two courses from outside the College of Science.

Complete two courses from: AFAM 151, AMS 159, ANTH 176, BUS 167, COMM 120, COMM 146, ECON 107, ENGL 106, ENVS 110, ENVS 117, ENVS 121, ENVS 124, ENVS 185, ENVS 187, GEOG 130, PHIL 126, HRTM 109 (6-8)

Requirements in the Major 40-41

BIOL 005 and BIOL 100W (6); BIOL 155 or BIOL 156 (3); BIOL 001, BIOL 002, BIOL 004, BIOL 006, BIOL 144, BIOL 160 and BIOL 163 (17); 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 4-11

From within or outside the College of Science

Total Units Required 120

Conservation Biology Emphasis...12

Must include the following. See advisor for additional electives.

BIOL 155 and ENT 101 (7); BIOL 164 or ZOOL 150 (3)

Entomology Emphasis 12

Must include the following. See advisor for additional electives.

ENT 101 (4)

Zoology Emphasis 12

Must include the following. See advisor for additional electives.

ENT 101, ZOOL 115, ZOOL 116

Total Units Required 123

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

CHEM 001A and CHEM 001B (10); CHEM 008, CHEM 009 and CHEM 132 (8); PYS 002A and PYS 002B (8); BIOL 005 (3); BIOL 155 or MS 104 (3); BIOL 156 (3); BIOL 100W (3)

Requirements in the Major 46-47

BIOL 001, BIOL 002, BIOL 003, BIOL 004 and BIOL 006 (13.5); BIOL 115 and BIOL 160 (8); BIOL 124 and BIOL 125 (5), BIOL 124 and BIOL 126 (4) or BOT 102 (4); 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)

Electives 0-1

Total Units Required 125-6

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 30

CHEM 001A and CHEM 001B (10); CHEM 008 (3) and CHEM 002A (4); PYS 002B or GEOL 007 (4); BIOL 005 and BIOL 156 (or BIOL 155 with advisor approval) (6); BIOL 100W (3)

Requirements in the Major 52

Core 40

BIOL 001, BIOL 002, BIOL 003, BIOL 004, BIOL 006, BIOL 115, BIOL 118 (or BIOL 116 with advisor approval) and BIOL 144 (21); BIOL 160 or BOT 160 (4); BOT 102 or BIOL 124 and BIOL 126 (4); BOT 165 or BIOL 172 (4); BOT 105, ENT 101, ZOOL 115 or ZOOL 116 (4); BIOL 163 (3)

Emphasis Area 12

To include 12 additional elective units as indicated below.

Botany Emphasis 12

Electives include the following. See advisor for additional electives.

BOT 102, BOT 103, BOT 104, BOT 105, BOT 165

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 or other calculus (3); BIOL 100W (3); BIOL 005 (3)	
Requirements in the Major	50
BIOL 001, BIOL 002, BIOL 003, BIOL 004 and BIOL 006 (13.5); BIOL 107 (3); BIOL 115 (4); BIOL 144 (0.5); 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 120, BIOL 121, BIOL 124/125, 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	131

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	20-22
PHYS 002A and PHYS 002B (8); MATH 030P or other calculus (3-5); BIOL 005 and BIOL 155 (6); BIOL 100W (3)	
Requirements in the Major	46
BIOL 001, BIOL 002, BIOL 003, BIOL 004, BIOL 006, BIOL 107, BIOL 107L, BIOL 115, BIOL 116, BIOL 135, BIOL 135L and BIOL 144 (30); MICR 101 (4); Complete twelve units from: BIOL 105, BIOL 116L, BIOL 117, BIOL 124, BIOL 125, BIOL 137, BIOL 205, BOT 102, MICR 170, or other courses with prior advisor approval (at least 8 elective units must be in Biological Sciences)	
Requirements in the Minor	23
CHEM 001A, CHEM 001B, CHEM 112A, CHEM 112B, CHEM 113A, CHEM 120S and CHEM 135	
Electives	0-2
Total Units Required	132

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	20-22
PHYS 002A and PHYS 002B (8); MATH 030P or other calculus (3-5); BIOL 005 and BIOL 155 (6); BIOL 100W (3)	
Requirements in the Major	46
BIOL 001, BIOL 002, BIOL 003, BIOL 004, BIOL 006, BIOL 115, BIOL 124, BIOL 125, BIOL 131, BIOL 135, BIOL 136 and BIOL 144 (32); 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	
Electives	0-2
Total Units Required	132

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 José State University	
Additional Courses	16
Select at least 3 units per category.	
<i>Biological Science:</i> Complete at least one of: BIOL 054, BIOL 101, BIOL 104A, BIOL 104B, BIOL 110, ENT 101	
<i>Physical Science:</i> Complete at least one of: CHEM 001A, CHEM 008, CHEM 030B, PHYS 001, PHYS 001L, PHYS 002A, PHYS 002B	
<i>Earth Science:</i> Complete at least one of: ASTR 101, ASTR 102, GEOL 001, GEOL 001L, 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.

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 Studies and Research website at www.sjsu.edu/gradstudies.

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).

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.

Students in this degree program emphasize areas of General Biology, Microbiology, Molecular Biology or Physiology through choice of advisor, committee, coursework 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**

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, coursework 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	4
BIOL 201 and BIOL 202		

Additional Graduate Course	1-4
Any approved 255 course (any department prefix or suffix)		

Thesis	1-3
BIOL 299		

Electives	19-24
100- or 200-level courses chosen with advisor consent		

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**

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, coursework and thesis.

Semester Units

Graduate Courses in Biology	5-7
BIOL 201, BIOL 202 and BIOL 284		

Additional Biology Course	1-3
BIOL 227 or BIOL 255P		

Thesis	1-3
BIOL 299		

Electives	20-24
100- or 200-level courses chosen with advisor consent		

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**

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, coursework and thesis.

Semester Units

Graduate Courses in Biology	4
BIOL 201 and BIOL 202		

Additional Biology Course	1-4
BIOL 205, BIOL 233, BIOL 255M or MICR 270		

Thesis	1-3
BIOL 299		

Electives	19-24
100- or 200-level courses chosen with advisor consent		

Total Units Required 30

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

Courses**BIOLOGY****LOWER DIVISION****BIOL 001. Plant Biology**

Plant structure, function, reproduction and environmental adaptations. Evolutionary relationships among plant groups. Cell cycles and cell division, Mendelian genetics, membrane transport and the scientific method.

Prerequisite: Eligibility for CHEM 1A and eligibility for ENGL 1A per EPT.

Lecture 3 hours/lab 3 hours.

Grade of "C" required for BIOL 2, BIOL 3, and courses that require BIOL 1.

CAN BIOL 6
4 units

BIOL 002. Animal Biology

Animals from Protozoa through Chordata, their evolution, ecology and organ system structure and function. Second of BIOL 1, 2, 3 sequence.

Prerequisite: BIOL 1 with a "C" or better; eligibility for ENGL 1A.

Lecture 3 hours/lab 3 hours, field trip.

Grade of "C" required for courses that require BIOL 2.

CAN BIOL 4
4 units

BIOL 003. Cell Biology

Life at the cellular and subcellular levels of organization. Cell structure, metabolism and communication. Gene organization and expression. Third of BIOL 1, 2, 3 sequence.

Prerequisite: BIOL 1 and BIOL 2 with a "C" or better; CHEM 1A;

Corequisite: BIOL 6.

Pre/Corequisite: CHEM 1B.
Lecture 3 hours/lab 3 hours.

CAN BIOL A
4 units

BIOL 003W. Cell Biology Workshop

A discussion/demonstration course intended for those students concurrently enrolled in Biology 3 Cell Biology or those desiring an introduction to the material. Topics in cell biology are covered in various formats incorporating different learning styles.

Pre/Corequisite: BIOL 3.
Credit / No Credit
1 unit

BIOL 004. The Profession of Biology

Career overview for biologists, including health, organismal biology, conservation, teaching and research. Path choices and pitfalls in undergraduate science. Required of all lower division majors as a prerequisite to upper division courses.

Prerequisite: Required of all entering frosh during their first semester and all entering transfer students during their first year at San Jose State.

Note: Offered every fall.

0.5 units

BIOL 005. Computer Literacy in Biology

Auto-tutorial course on hardware and software used in biology. Software includes operating system, database, spreadsheet, graphics, statistics, data acquisition, presentation, and word processing. Various file types are created, manipulated, imported, and exported.

Prerequisite: Satisfaction of the ELM requirement.
Activity 6 hours.
3 units

BIOL 006. Biological Safety

Introduction to basic principles of laboratory safety with respect to the use and handling of organisms ad chemicals in biology labs.

Prerequisite: BIOL 1 and BIOL 2 (with a "C" or better); CHEM 1A.

1 unit

BIOL 010. The Living World

Provides students with an understanding of the most fundamental concepts of modern biology including ecology (the interaction between organisms and their environment), human inheritance, the structure and function of living organisms, evolution, strategies for survival and reproduction, and biotechnology.

Not an elective in the department majors.

GE: B2

3 units

BIOL 020. Ecological Biology

Introduction to diversity, ecology, evolution and behavior. In conjunction with BIOL 21 a more complete survey of biology.

Lecture 2 hours/lab 3 hours/field trips.

Not an elective in the department majors.

GE: B2+B3

3 units

BIOL 021. Human Biology

Introduction to physiology, reproduction, development, heredity and aging. With BIOL 20 a more complete survey of biology.

Lecture 2 hours/Lab 3 hours.

Not an elective in the department majors.

GE: B2+B3

3 units

BIOL 023. Molecular Biology for Computer Scientists

Introduction to molecular biology, molecular genetics, and cell biology at the level required to understand bioinformatics applications. Intended for Computer Science majors. Not an elective for biology majors.

Prerequisite: High school chemistry and biology; CS 46A and CS 46B.

3 units

BIOL 054. Human Understanding

Major issues in health and disease, learning and memory, maturation and aging (such as diet, exercise, mind-body medicine, and addictions). Emphasis on learning how to understand and apply physiologic information for personal growth and lifelong learning.

GE: E

3 units

BIOL 065. Human Anatomy

Introductory study of gross and microscopic human anatomy including corresponding pathology. For majors in nursing and human performance.

Lecture 3 hours/lab 3 hours.

Not an elective in the department majors.

4 units

BIOL 066. Human Physiology

Explanation of physiological principles from the molecular and cellular-levels to organ systems. Neural and endocrine controls and integration among systems. Health care orientation.

Prerequisite: High school algebra. Recommended: Human Anatomy, Chemistry 30A.

Lecture 3 hours/lab 3 hours/seminar 1 hour.

Not an elective in the major departments.

5 units

UPPER DIVISION**BIOL 100W. Scientific Communication Workshop**

Analysis and communication of scientific research to both scientific and general audiences. Satisfies upper division writing requirement.

Prerequisite: BIOL 3 and BIOL 5 (with grades of "C" or better); ENGL 1B (with a grade of C or better); completion of core GE, satisfaction of Writing Skills Test and upper division standing.

ABC/No Credit

GE: Z

3 units

BIOL 101. Origins of Life

Process of evolution, fossil evidence for life origins, and the place of humans in nature.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

Not an elective in the department majors.

GE: R

3 units

BIOL 104A. Natural History of California Wildlife

For those interested in the out-of-doors or elementary school teaching. A. Emphasis on identification and natural history of common vertebrate animals. Each requires an individual project.

Lecture 1 hour/lab and field 3 hours/activity 2 hours.

Not an elective in the department majors.

3 units

BIOL 104B. Natural History of California Wildlife

For those interested in the out-of-doors or elementary school teaching. Emphasis on plants. Each requires an individual project.

Lecture 1 hour/lab and field 3 hours/activity 2 hours.

Not an elective in the department majors.

3 units

BIOL 105. Principles of Developmental Biology

Emphasis on human development. Other animal systems (fly, frog, chick, mouse) will also be studied to aid in understanding anatomical, physiological, genetic and molecular mechanisms operating during gametogenesis, fertilization, cleavage, gastrulation and organogenesis.

Prerequisite: BIOL 1, BIOL 2 and BIOL 3 (with grades of "C" or better); BIOL 115.

3 units

BIOL 107. Immunology

Provides information about all areas of immunology with emphasis on the basic concepts of immune mechanisms of the acquired and innate immune systems. Uses the basic information to study immune disorders and the immune response to infectious agents.

Prerequisite: BIOL 3, organic chemistry and MICR 101 (all with a grade of "C" or better).

3 units

BIOL 107L. Immunology Laboratory

The experiments in this beginning immunology laboratory are designed to study both the innate and acquired immune systems. Experimentation into the formation, function and detection of antibodies provides students with skills in basic immunologic techniques. Flow cytometry is used in identification of immune cells as well as functional assays of complement mediated phagocytosis.

Prerequisite: BIOL 3 and MICR 101 (with grade of "C" or better).

Pre/Corequisite: BIOL 6 and BIOL 107.

3 hour Lab.

1 unit

BIOL 108. Biotechnology in the Twenty-First Century

Presentation of recent advances in biotechnology and discussion of societal implications. Topics include applications in basic research, medicine, agriculture, consumer products and warfare. Lecture 3 hours.

Not an elective in the department majors.

3 units

BIOL 109. Human Neuroanatomy and Physiology

Gross and microscopic structure and function of the human nervous system. Introduction to experimental and clinical techniques.

Prerequisite: BIOL 54 or BIOL 65.

Lecture 3 hours/lab 3 hours.

Not an elective in the department majors.

4 units

BIOL 110. Biodiversity and Biopolitics

Application of ecological principles to the conservation of biodiversity and the management of ecosystems. Analysis of biological, economic, social and political interrelationships involved in conservation.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

Not an elective in the department majors.

GE: R

3 units

BIOL 112. Hazardous Waste

See ENVS 112.

3 units

BIOL 115. General Genetics

Principles and methods of microbial, plant and animal genetics. Mendelism, cytogenetics, molecular genetics, mutation, quantitative genetics and genetic aspects of evolution.

Prerequisite: BIOL 3 (with grade of "C" or better), CHEM 1A and CHEM 1B.

Lecture 3 hours/discussion 1 hour.

4 units

BIOL 116. Molecular Genetics

Molecular genetics of prokaryotes and eukaryotes. Replication, repair, mutation, regulation of gene expression, gene organization and methods of recombinant DNA research.

Prerequisite: BIOL 115 or MICR 127 (with a grade of "C" or better); CHEM 112B.

3 units

BIOL 116L. Genetics Laboratory

Selected experiments to demonstrate genetic concepts using Drosophila, bacteria and other organisms. Techniques include those of classical, bacterial and molecular genetics.

Pre/Corequisite: BIOL 6.

Lab 6 hours.

3 units

BIOL 117. Human Genetics

Mendelian traits, classical and molecular cytogenetics, DNA variation, sex determination, gene mapping, mutation, population genetics, multifactorial inheritance, genetic counseling and prenatal diagnosis.

Prerequisite: BIOL 115 (with a grade of "C" or better).
3 units

BIOL 118. Evolutionary Genetics

Principles of molecular and population genetics from an evolutionary perspective. Application of DNA analyses and other techniques to conservation biology, evolution, ecology and systematics.

Prerequisite: BIOL 115.
Lecture 2 hours/seminar 1 hour.
3 units

BIOL 119. Neurogenetics

Molecular genetics of neurological disorders such as Alzheimer's disease, Huntington's disease, amyotrophic lateral sclerosis, and prion diseases.

Prerequisite: BIOL 115 (with a grade of "C" or better).
2 units

BIOL 120A. Laboratory Electronics for Scientists I

See PHYS 120A.
3 units

BIOL 120I. Laboratory Electronics for Scientists II: Instrumentation

See PHYS 120I.
3 units

BIOL 121. Introduction to Bioinformatics

An introduction to the use of computer applications available for the manipulation and analysis of DNA, RNA and protein sequences. The use of data on the internet to solve biological problems.

Prerequisite: BIOL 116 or CHEM 130A or CHEM 135 or CHEM 136.
3 units

BIOL 122. Bacterial Diversity

See MICR 122.
1 unit

BIOL 122L. Bacterial Diversity Laboratory

See MICR 122L.
2 units

BIOL 123A. Bioinformatics I

See CS 123A.
3 units

BIOL 123B. Bioinformatics II

See CS 123B.
3 units

BIOL 124. Mammalian Physiology

Physiology of organ systems of mammals, with emphasis on the human. Neuromuscular, respiratory, digestive, cardiovascular, renal, endocrine, reproductive and thermo-regulatory physiology.

Prerequisite: CHEM 8 or CHEM 112B, PHYS 2B and BIOL 3 (with grade of "C" or better).
Corequisite: BIOL 125 highly recommended.
3 units

BIOL 125. Mammalian Physiology Lab

Selected lab units to demonstrate complex physiological mechanisms and the physiology of organ systems. Methods include animal experiments and physiological recording and stimulation.

Corequisite: BIOL 124.
Pre/Corequisite: BIOL 6.
Lab 6 hours.
2 units

BIOL 126. Vertebrate Physiology Lab

Selected experiments in vertebrate physiology to demonstrate basic mechanisms, instrumentation and techniques.

Corequisite: BIOL 124.
Pre/Corequisite: BIOL 6.
Lab 3 hours.
1 unit

BIOL 129. Neuroscience

See PSYC 129.

3 units

BIOL 131. Endocrine Physiology

Emphasis on mammalian systems. Mechanisms of hormone action, secretion and physiological effects; hormone assay techniques.

Prerequisite: Upper division organ systems physiology, e.g., BIOL 124.
3 units

BIOL 134. Vertebrate Histology

Light and electron microscopic structure of vertebrate tissues with consideration of related functions. Emphasis on the examination of human tissues including corresponding pathology.

Prerequisite: BIOL 2 (with grade of "C" or better).
Pre/Corequisite: BIOL 6.
Lecture 2 hours/lab 6 hours.
4 units

BIOL 135. Molecular Cell Biology

Experimental basis for current models of organelle structure, membrane transport and excitability, ligand-mediated signal transduction, cytoskeletal organization, gene expression, ER/Golgi/lysosome traffic, mitochondria/chloroplast function and histogenesis.

Prerequisite: BIOL 115 (with grade of "C" or better); CHEM 8 or both CHEM 112A and CHEM 112B; PHYS 2A and PHYS 2B; BIOL 100W (with grade of "C" or better).
3 units

BIOL 135L. Molecular Cell Biology Lab

Lab experience in nucleic acid and protein purification, enzyme assay, bacterial and mammalian cell culture, immunofluorescence, radioisotopic labeling, column chromatography, agarose and polyacrylamide gel electrophoresis, spectrophotometry, liquid scintillation counting, etc.

Corequisite: BIOL 135.
Pre/Corequisite: BIOL 6.
Lab 6 hours.
2 units

BIOL 136. Vertebrate Neurophysiology

Review of topics from the molecular to the organismal level. Chemical and electrotonic phenomena of membranes, neurochemistry, sensory transduction, information coding, neural control, consciousness and evolution of neural systems.

Prerequisite: BIOL 3 (with grade of "C" or better), CHEM 112B, PHYS 2B.
Pre/Corequisite: BIOL 124.
3 units

Biol 137. Introduction to Principles of Toxicology

Emphasis on basic principles of toxicology. Toxicity of several classes of compounds covered in depth. Focus on basic chemical principles and appropriate applications.

Prerequisite: BIOL 3 (with grade of "C" or better) and organic chemistry.

3 units

Biol 140. Human Sexuality

See ANTH 140.

GE: S

3 units

Biol 141. Human Factors in the Aviation Environment

Effects of time zone changes, sleep disruption, drugs on pilot performance. Role of FAA inspectors, physicians, cabin attendants, unions. Cockpit crew coordination; pilot psychology; aviation safety and accident investigation. Experimental avionics.

Prerequisite: Upper division standing.

Not an elective in most department majors.

3 units

Biol 144. Culminating Experience for Biological Science Seniors

Students will reflect on their experiences as an undergraduate Biological Sciences major, and faculty will evaluate what students have gained from the major via tests, focus groups, student self-reflections, and other techniques.

Prerequisite: Open only to graduating seniors (students with no more than two semesters to graduate, including the one in which they take Biology 144) in Biological Sciences.

Offered in the Fall as needed and every Spring. 0.5 units

Biol 150. Field Studies in Natural History

Field courses given on site, typically covering general ecology, botany, geology, zoology and specialized natural areas such as Baja California, Death Valley, seacoasts and mountains.

Not an elective in the department majors.

Repeatable for credit

GE: B3

1-2 units

Biol 155. Hypothesis Testing

Experimental design and statistical analysis of biological data from manipulative experiments. This course provides experience in designing and analyzing experiments using t-tests, 1- and 2-way ANOVA, Randomized Block ANOVA, Nested ANOVA, Linear Regression and Tests of Independence.

Prerequisite: BIOL 5 (with grade of "C" or better) and satisfaction of ELM.

Lecture 2 hours/lab 3 hours

3 units

Biol 156. Pattern Recognition and Analysis

Sampling design and statistical analysis of biological patterns. In this course, students design and execute a field experiment (one required weekend field trip) that incorporates multivariate measurements. Students analyze the data with Log Linear analysis, Logistic Regression, Principal Components Analysis, Canonical Correlation and various Regression techniques.

Prerequisite: BIOL 5 (with grade of "C" or better) and satisfaction of ELM.

Pre/Corequisite: BIOL 6.

Lecture 2 hours/lab 3 hours.

3 units

Biol 160. Ecology

Factors that influence the distribution and abundance of organisms; some aspects of applied ecology.

Prerequisite: Lower division biology core (with grade of "C" or better); BIOL 155 or BIOL 156.

Pre/Corequisite: BIOL 6.

Lecture 3 hours/lab 3 hours.

4 units

Biol 163. Conservation Biology and Management

Principles of conservation biology, including management for the preservation of biodiversity and maintenance of viable populations. Examples from plants and animals.

Prerequisite: BIOL 160 or BOT 160 (with grade of "C" or better).

3 units

Biol 164. Conservation and Management Techniques

Techniques for evaluating and managing the abundance and diversity of plants and animals.

Pre/Corequisite: BIOL 6.

Lecture 1 hour/lab-field 6 hours.

3 units

Biol 165. Advanced Human Anatomy

Study of human anatomy emphasizing clinical principles and dissection techniques.

Prerequisite: BIOL 3 and senior or graduate standing.

Lecture 2 hours/lab 6 hours.

4 units

Biol 172. Ecology of Inland and Estuarine Waters

Biotic and abiotic principles and relationships in lakes, reservoirs, streams and estuaries. Water quality testing, aquatic habitat sampling and assessment, problem identification and agency responsibilities and jurisdictions.

Prerequisite: One year of chemistry and biology core (with grade of "C" or better).

Pre/Corequisite: BIOL 6.

Lecture 2 hours/lab and field 6 hours.

4 units

Biol 177. Physiology for Engineers

Structure and function of physiological systems and discussion of topics of particular importance to the design, development, construction and clinical application of biomedical devices. Practical application of new technologies to monitor, repair, replace or augment those systems.

Prerequisite: BIOL 65 or equivalent, college level physics and chemistry; or instructor consent.

3 units

Biol 180. Individual Studies

Advanced lab work in special fields.

Prerequisite: Majors only.

Pre/Corequisite: BIOL 6.

Repeatable for credit

Credit / No Credit

1-4 units

Biol 181. Introduction to Health Care

Participation in various medical departments at a local hospital, opportunity to visit local dentists or work in an optometry clinic.

Hepatitis B vaccination may be required in some settings.

Prerequisite: Instructor consent.

Repeatable for credit

Credit / No Credit

1-2 units

Biol 182. Tutor Assistant in Biology

Supervised classroom or field experience as a tutor-assistant in experiments, demonstrations and discussion.

Prerequisite: Upper division standing, instructor consent and appropriate academic background.

Repeatable for credit

Credit / No Credit

1-2 units

Biol 184. Directed Reading

Assigned readings of selected books, journals and papers chosen to fill gaps in training or for contact with new fields. Evaluation through weekly reports and conferences.

Prerequisite: Instructor consent.

Repeatable for credit

Credit / No Credit

1-4 units

Biol 186. Senior Thesis

Advanced library, laboratory or field research under the supervision of a faculty member, culminating in a senior thesis.

Prerequisite: Instructor consent.

Pre/Corequisite: BIOL 6.

Credit / No Credit

2-4 units

Biol 190. Field Studies in Biology

Field program involving planning and execution of a project. Course is repeatable for a maximum of 12 units.

Prerequisite: Instructor consent.

Pre/Corequisite: BIOL 6.

Repeatable for credit

Credit / No Credit

1-4 units

Biol 193. Microbiological Techniques

Microbiological techniques for non-biologists.

Prerequisite: Upper division standing; lower division biology or instructor consent.

Pre/Corequisite: BIOL 6.

1 unit

GRADUATE

Biol 201. Graduate Seminar in Biological Sciences

Seminar designed to introduce principles and topics in biological research. Mandatory during first semester of enrollment. Must be taken twice for credit.

Repeatable for credit

Credit / No Credit

0.5 units

Biol 202. Graduate Studies in Biology

A seminar on current research and theory in the life sciences, emphasizing scientific writing and formal oral presentations.

Prerequisite: Instructor consent.

Lecture/seminar/discussion 5 hours.

3 units

Biol 205. Advanced Molecular Techniques

Emphasizes the laboratory techniques of modern molecular biology. Depending on instructor, focus will be on animal, plant, yeast, bacterial or viral systems. Course is repeatable for credit if content changes.

Prerequisite: BIOL 135L or instructor consent.

Pre/Corequisite: BIOL 6.

Lecture 2 hours/lab 6 hours.

Repeatable for credit

4 units

BIOL 210. Molecular Mechanisms of Cellular Activation

Examines mechanisms by which cytokines, growth factors or immunoregulators initiate cellular activation, blastogenesis and differentiation. Receptor isolation/characterization and methods used in defining signal transduction pathways. Design of testable experimental models for growth control regulation.

Prerequisite: BIOL 135.

2 units

BIOL 215. Seminar in Advanced Genetics

Selected topics of current interest in advanced genetics. Each semester will emphasize a particular field of genetics; e.g., molecular genetics, human genetics, developmental genetics, population genetics, etc.

2 units

BIOL 218. Evolution

Integrated use of modern molecular techniques and classical evolutionary theory to address a broad array of questions in evolutionary biology.

Prerequisite: BIOL 115 and instructor consent.

3 units

BIOL 221. Bioinformatics

Supplemental discussion and use of bioinformatics applications to solve advanced problems in molecular and cell biology.

Corequisite: BIOL 121.

1 unit

BIOL 223. Radiation Biology

Introduction to the biological effects of ionizing radiation. Discussion of physical interactions, energy deposition and chemical changes that result in cell damage. Topics include survival and repair, mutagenesis and acute and late effects.

Prerequisite: BIOL 3, PHYS 2B or instructor consent.

3 units

BIOL 227. Advanced Physiology/Pharmacology Laboratory

Performance of lab units designed to illustrate complexities of physiological regulation and principles of pharmacology including pharmacokinetics and physiological responses to drugs and hormones. Techniques utilized include anesthesia, small animal surgery, use of the polygraph, electrophoresis, RIA and GLC.

Prerequisite: BIOL 124 and BIOL 125 (or equivalent) and instructor consent.

Pre/Corequisite: BIOL 6.

Lab 9 hours.

3 units

BIOL 227T. Principles of Pharmacology

Principles of pharmacology, especially as related to the pharmaceutical industry and clinical applications.

Prerequisites: Matriculation in the Master of Biotechnology Program. BIOL 3. BIOL 66 or BIOL 124 recommended.

3 units

BIOL 230. Comparative Animal Physiology

A seminar in the functional relationships of invertebrates and vertebrates. Evolutionary patterns and environmental adaptations are considered.

Prerequisite: An upper division course in physiology or instructor consent.

Pre/Corequisite: BIOL 6.

3 units

BIOL 233. Immunological Techniques

Principles, concepts and mechanisms relative to serological and other immunological procedures and reactions with emphasis on practical applications.

Prerequisite: Upper division microbiology or cell biology, or organic chemistry and instructor consent.

Pre/Corequisite: BIOL 6.

Lab 9 hours.

3 units

BIOL 234. Cellular Ultrastructure

Structure and function of cellular components as revealed by the electron microscope. Principles and techniques of electron microscopy in biology, including introduction to electron optics, specimen preparation, microtomy, use of the electron microscope and interpretation of microphotography.

Prerequisite: Instructor consent. BIOL 3, PHYS 2A, PHYS 2B.

Pre/Corequisite: BIOL 6.

Lecture 2 hours/lab 6 hours.

4 units

BIOL 240. Scanning Electron Microscopy in Biology

Structure and function of cells and tissues as revealed by the Scanning Electron Microscope. Principles and techniques of SEM in biology, including electron optics, specimen preparation, use of SEM and photomicrographic interpretation.

Prerequisite: Instructor consent.

Pre/Corequisite: BIOL 6.

Lecture 2 hours/lab 6 hours.

4 units

BIOL 255. Seminar in Advanced Biology

Advanced study in biology. Course is repeatable for credit when content changes.

Prerequisite: Instructor consent.

Repeatable for credit

1-3 units

BIOL 255E. Seminar in Advanced Biology: Organismal Biology

Advanced study in organismal biology, conservation and ecology. Specific topics will include, among others: population ecology, community ecology, animal behavior and the ecology of selected ecosystems. Course is repeatable for credit when content changes.

Prerequisite: Instructor consent.

Pre/Corequisite: BIOL 6.

Repeatable for credit

1-3 units

BIOL 255L. Advanced Biology Laboratory

Laboratory or field experience in advanced biology. Course is repeatable for credit when content changes.

Prerequisite: Instructor consent.

Pre/Corequisite: BIOL 6.

May be taken concurrent with any 255 seminar.

Repeatable for credit

1-2 units

BIOL 255M. Seminar in Advanced Biology: Molecular and Microbiology

Advanced study in molecular and microbiology. Course is repeatable for credit when content changes.

Prerequisite: Instructor consent.

Pre/Corequisite: BIOL 6.

Repeatable for credit

1-3 units

BIOL 255P. Seminar in Advanced Biology: Physiology

Advanced study in plant or animal physiology. Course is repeatable for credit when content changes.

Prerequisite: Instructor consent.

Pre/Corequisite: BIOL 6.

Repeatable for credit

1-3 units

BIOL 280. Individual Studies

Supervised individual graduate project. Course is repeatable for a maximum of six units.

Pre/Corequisite: Graduate standing and instructor consent.

Repeatable for credit

Credit / No Credit

1-2 units

BIOL 281T. Individual Studies in Biotechnology

See SCI 281T.

Repeatable for credit

1-4 units

BIOL 283T. Topics in Biotech Regulatory Affairs

See SCI 283T.

Repeatable for credit

3 units

BIOL 284. Tutorial

Directed reading and discussion of biological literature, professional skills coaching, career development tutorial and/or individualized preparation for culminating graduate experience.

Pre/Corequisite: Graduate standing in MA program and instructor consent.

Repeatable for credit

Credit / No Credit

1-3 units

BIOL 285. Colloquium in Biological Sciences

Meetings for the presentation and discussion of advanced studies in special fields including original work by the faculty, guest investigators and graduate students. Topics will vary from year to year.

Repeatable for credit

Credit / No Credit

1 unit

BIOL 298. Research

Independent investigations of an advanced character for the student with adequate preparation, to be carried on under the direct supervision of a staff member.

Prerequisite: Instructor consent.

Pre/Corequisite: BIOL 6.

Repeatable for credit

Credit / No Credit

1-4 units

BIOL 299. Master's Thesis or Project

Prerequisite: Admission to candidacy for the Master of Science degree.

Pre/Corequisite: BIOL 6.

Repeatable for credit

Credit/No Credit/Report in Progress

1-4 units

BOTANY**UPPER DIVISION****BOT 102. Plant Physiology**

Lecture and experimental investigations of physiological and molecular biological mechanisms in higher plants, including genetic transformation, photosynthesis, modes of action of plant hormones, signal transduction, nitrogen fixation and water relations.

Prerequisite: BIOL 1 and BIOL 3 (with grade of "C" or better), BIOL 100W, (with grade of "C" or better) BIOL 115, CHEM 8, CHEM 9 or CHEM 112A.

Pre/Corequisite: BIOL 6.

Lecture 2 hours/lab 6 hours.

4 units

BOT 103. Plant Anatomy

Structure, development and organization of cells, tissues and tissue systems of seed plants. Comparative anatomy of organs, emphasizing root, stem and leaf.

Prerequisite: BIOL 1, BIOL 2, BIOL 3 (with grade of "C" or better), BIOL 100W.

Pre/Corequisite: BIOL 6.

Lecture 2 hours/lab 6 hours.

4 units

BOT 104. Plant Taxonomy

Taxonomic relations and classification of ferns, conifers and flowering plants, with practice in their collection and identification. Selected techniques of cytobotany, chemotaxonomy, palynology and numerical taxonomy.

Prerequisite: BIOL 1 (with grade of "C" or better).

Pre/Corequisite: BIOL 6.

Lecture 2 hours/lab 6 hours.

4 units

BOT 105. Plant Morphology

Structure, reproduction and phylogenetic relationships of bryophytes, lower vascular plants, ferns and seed plants.

Prerequisite: BIOL 1 (with grade of "C" or better).

Lecture 2 hours/lab 6 hours.

4 units

BOT 160. Ecology

See BIOL 160.

4 units

BOT 165. Plant Communities of California

Ecology, species composition and vegetation structure of California plant communities. Origins, history and changes brought about by natural succession and human impact.

Prerequisite: BIOL 1, BIOL 2, BIOL 3 (with grade of "C" or better)

Pre/Corequisite: BIOL 6.

Lecture 2 hours/lab-field 6 hours (some weekend field trips).

4 units

BOT 180. Individual Studies

Advanced work in special fields.

Prerequisite: Majors only or instructor consent.

Pre/Corequisite: BIOL 6.

Repeatable for credit

Credit / No Credit

1-4 units

BOT 186. Senior Thesis

Advanced laboratory or field research under supervision of faculty member, culminating in a senior thesis.

Prerequisite: Instructor consent.

Pre/Corequisite: BIOL 6.

Credit / No Credit

2-4 units

GRADUATE**BOT 255. Advanced Botany**

Advanced aspects of morphology, mycology and other fields of botany. Course may be repeated for credit with advisor consent.

Prerequisite: Specialization in botany and instructor consent.

Pre/Corequisite: BIOL 6.

Repeatable for credit

1-3 units

BOT 298. Research

Independent investigations.

Prerequisite: Instructor consent.

Pre/Corequisite: BIOL 6.

Repeatable for credit

Credit / No Credit

1-4 units

BOT 299. Master's Thesis or Project

Prerequisite: Admission to candidacy for the master's degree.

Pre/Corequisite: BIOL 6.

Repeatable for credit

Credit/No Credit/Report in Progress

1-4 units

ENTOMOLOGY**UPPER DIVISION****ENT 101. Insect Diversity**

Introduction to biology, ecology and behavior of insects. Ways in which insects affect humans and the environment. Students collect, curate and identify common families of insects.

Prerequisite: BIOL 1, BIOL 2 (with grade of "C" or better). Instructor consent.

Pre/Corequisite: BIOL 6.

Lecture 3 hours/lab-field 3 hours.

4 units

ENT 103. Insect Systematics

Observation and collection of local insects. Taxonomic criteria and nomenclatural procedures. Field experiences in search specimens.

Prerequisite: ENT 101 (with grade of "C" or better).

Lab/field 6 hours

Spring, alternate years.

2 units

ENT 104. Taxonomy of Immature Insects

Morphology, ecology and taxonomy of immature insects of all major orders. Collection, preservation, study and identification of larvae of Lepidoptera, Coleoptera, Hymenoptera and Diptera.

Prerequisite: ENT 101 (with grade of "C" or better).

Lab/field 6 hours

Spring, alternate years.

2 units

ENT 106. Forensic Entomology

Forensic entomology examines the science and methodology used to collect, analyze, and present information regarding insects and other arthropods that are important in legal investigations.

Prerequisite: BIOL 1, BIOL 2, BIOL 3 (with grades of "C" or better).

Lecture 2 hours/lab 3 hours.

3 units

ENT 108. Agricultural Entomology

Identification, behavior, biology and importance of insects and mites which destroy or damage crops, stored products and ornamental plants; methods of pest management.

Prerequisite: ENT 101 (with grade of "C" or better).

Lecture 2 hours/lab-field 3 hours.

Fall, alternate years.

3 units

ENT 150. Biological Control

Natural and artificial control of pestiferous insects, other arthropods and weeds, through the use of predators, parasites, fungi, bacteria and viruses.

Prerequisite: ENT 101 (with grade of "C" or better).

Lecture 2 hours/lab-field hours.

Fall, alternate years.

3 units

ENT 180. Individual Studies

Advanced lab work in entomology.

Prerequisite: Instructor consent.

Repeatable for credit

Credit / No Credit

1-4 units

ENT 185. Seminar in Entomology

Current entomological literature and research and historical development of various entomological concepts.

1 unit

ENT 186. Senior Thesis

Advanced laboratory or field research under supervision of faculty member, culminating in a senior thesis.

Prerequisite: Instructor consent.

Credit / No Credit

2-4 units

GRADUATE**ENT 255. Advanced Entomology**

Advanced aspects of morphology, taxonomy, ecology and other fields of entomology. Course may be repeated for credit with advisor consent.

Prerequisite: Specialization in entomology and instructor consent.

Repeatable for credit

1-3 units

ENT 298. Research

Independent investigations.

Prerequisite: Instructor consent.

Pre/Corequisite: BIOL 6.

Repeatable for credit

Credit / No Credit

1-4 units

ENT 299. Master's Thesis or Project

Prerequisite: Admission to candidacy for the master's degree.

Pre/Corequisite: BIOL 6.

Repeatable for credit

Credit/No Credit/Report in Progress

1-4 units

MICROBIOLOGY

LOWER DIVISION

MICR 020. General Bacteriology

Morphology, physiology, genetics and diversity of bacteria; their control by chemical and physical means; and their role in disease. For majors in allied health professions.

Prerequisite: CHEM 1B, or CHEM 30A.

Lecture 4 hours/lab 3 hours.

Not an elective in the department majors.

5 units

UPPER DIVISION

MICR 101. General Microbiology

The microbial world and its ecological interrelationships; skills required for the study of micro-organisms.

Prerequisite: BIOL 1, BIOL 2 and BIOL 3 (with grades of "C" or better); CHEM 8 or CHEM 112A.

Pre/Corequisite: BIOL 6.

Lecture 2 hours/lab 6 hours.

4 units

MICR 122. Bacterial Diversity

The focus of this course is the study of the characteristics and microecology of unusual prokaryotes. Molecular and traditional approaches will be discussed.

Prerequisite: MICR 101 (with grade of "C" or better).
Misc Lecture 1 hour.

1 unit

MICR 122L. Bacterial Diversity Laboratory

Laboratory techniques in bacterial diversity.

Prerequisite: MICR 101 (with grade of "C" or better).

Pre/Corequisite: BIOL 6.

6 hour Lab.

2 units

MICR 123. Food Microbiology

Detection and enumeration of both normal microbiological flora and spoilage organisms of specific foods. Control of sanitation problems in food production and processing.

Prerequisite: MICR 101 (or equivalent with grade of "C" or better).

Pre/Corequisite: BIOL 6.

1 unit

MICR 123L. Food Microbiology Laboratory

Practical microbiological techniques for the detection and enumeration of both normal microbiological flora and spoilage organisms of specific foods; and for the control of sanitation problems in food production and processing. Field trips to local food industries and/or a water treatment plant may be required within lab hours.

Prerequisite: MICR 101 or equivalent (with grade of "C" or better).

Pre/Corequisite: BIOL 6.

6 hour Lab.

2 units

MICR 127. Microbial Physiology

Studies of the physiology of microbes specifically focusing on bacteria (growth, metabolism and regulation of gene expression); growth experiments and mutagenesis techniques.

Prerequisite: MICR 101 (with grade of "C" or better).

Pre/Corequisite: BIOL 6.

2 units

MICR 127L. Microbial Physiology Laboratory

Laboratory experiments involve small and large-scale growth experiments (fermentation, continuous culture and batch culture), techniques used in mutagenesis and mutant characterization as well as construction and studies of reporter fusions.

Prerequisites: MICR 101 (with grade of "C" or better).

Pre/Corequisite: BIOL 6.

Lab 6 hours.

2 units

MICR 140. Hematology

Blood and blood forming organs. Theoretical and clinical aspects of normal and pathologic conditions of the erythrocytic, leukocytic, coagulation and blood group systems.

Prerequisite: MICR 101 (with grade of "C" or better).

Pre/corequisite: BIOL 6.

Repeatable for credit

2 units

MICR 140L. Hematology Laboratory

Laboratory methodologies used to diagnose hematologic pathology.

Prerequisite: MICR 101 (with a grade of "C" or better).

Pre/corequisite: BIOL 6, MICR 140.

Lab 2 hours.

Repeatable for credit

2 units

MICR 141. Pathogenic Microbiology I

Concepts and principles of medical microbiology, emphasizing the biology of host-parasite interactions and mechanisms of infectious disease pathogenesis.

Prerequisite: MICR 101, BIOL 107 or BIOL 107S (with grades of "C" or better); organic chemistry.

Pre/Corequisite: BIOL 6.

3 units

MICR 141L. Pathogenic Microbiology I – Laboratory

Application of principles of medical microbiology to pathogen isolation, characterization and identification.

Prerequisite: BIOL 107 and MICR 127 (with grades of "C" or better).

Corequisite: MICR 141.

Pre/Corequisite: BIOL 6.

Lab 9 hours

3 units

MICR 142. Pathogenic Microbiology II

Concepts and principles of medical microbiology, emphasizing the biology of host-parasite interactions and mechanisms of infectious disease pathogenesis. Continuation of MICR 141.

Prerequisite: MICR 141 (with grade of "C" or better).

Pre/Corequisite: BIOL 6.

Lecture 3 hours.

3 units

MICR 142L. Pathogenic Microbiology II – Laboratory

Application of principles of medical microbiology to pathogen isolation, characterization and identification.

Prerequisite: MICR 141 and MICR 141L (with grades of "C" or better).

Corequisite: MICR 142.

Pre/Corequisite: BIOL 6.

Lab 9 hours.

3 units

MICR 170. General Virology

Molecular and biological aspects of animal, plant and microbial viruses and their relationships with their hosts.

Prerequisite: BIOL 3 (with grade of "C" or better) and organic chemistry.

3 units

MICR 180. Individual Studies

Advanced lab work in special fields.

Prerequisite: Majors only or instructor consent.

Pre/Corequisite: BIOL 6.

Repeatable for credit

Credit / No Credit

1-4 units

MICR 184. Directed Reading

Assigned readings of selected books, journals and papers to fill gaps in training or for contact with new fields. Evaluation through weekly reports and conferences.

Prerequisite: Instructor consent.

Repeatable for credit

Credit / No Credit

1-4 units

GRADUATE

MICR 250. Topics in Advanced Microbiology

A seminar exploring various aspects of microbiology. Course may be repeated for credit with advisor consent.

Prerequisite: Instructor consent.

Repeatable for credit

1-3 units

MICR 270. Advanced Virology

Molecular and biological aspects of animal, plant and microbial viruses and their relationships with their hosts. Additional research and/or papers as required by the instructor.

Prerequisite: Instructor consent.

3 units

MICR 291. Field Work in Clinical Laboratory Science

Fieldwork in affiliated hospital laboratories prerequisite to the California Licensing examination for Clinical Laboratory Science (CLS).

Prerequisite: Baccalaureate degree in a biological science, valid license as a CLS Trainee, admission into the CLS Traineeship, and instructor consent. Concurrent enrollment in MICR 292.

Repeatable for credit

No Degree Credit

12 units

MICR 292. Topics and Demonstrations in Clinical Laboratory Science

Presentations and demonstrations of topics and selected clinical lab procedures.

Prerequisite: Baccalaureate degree in a biological science, valid license as a CLS Trainee, admission into the CLS Traineeship, and instructor consent. Concurrent enrollment in MICR 291.

Repeatable for credit

3 units

MICR 298. Research

Advanced individual work in a specialized field of microbiology.

Prerequisite: Instructor consent.

Pre/Corequisite: BIOL 6.

Repeatable for credit

Credit / No Credit

1-4 units

MICR 299. Master's Thesis or Project

Prerequisite: Admission to candidacy for the Master of Science degree and instructor consent.

Pre/Corequisite: BIOL 6.

Repeatable for credit

Credit/No Credit/Report in Progress

1-4 units

ZOOLOGY**UPPER DIVISION****ZOOL 115. Invertebrate Zoology and Natural History**

The evolution, distribution, structure, natural history and systematics of invertebrates other than insects.

Prerequisite: BIOL 2 (with grade of "C" or better).

Lecture 2 hours/lab-field trips 6 hours.

4 units

ZOOL 116. Vertebrate Evolution and Natural History

Origin, evolution, distribution and natural history of the vertebrates. Development, reproductive patterns, anatomy, morphology, behavior, ecology and systematics.

Prerequisite: BIOL 2 (with grade of "C" or better).

Lecture 2 hours/lab 6 hours with several field trips.

4 units

ZOOL 150. Fishery Conservation and Management

Principles and techniques for evaluating and managing habitat, life history characteristics and population dynamics of aquatic vertebrates.

Prerequisite: BIOL 160 or BOT 160.

Pre/Corequisite: BIOL 6.

Lecture 1 hour/lab-field 6 hours.

Some optional weekend field trips.

3 units

ZOOL 160. Zoogeography

Animal distribution throughout the world and factors and basic principles affecting it.

Prerequisite: BIOL 2 (with grade of "C" or better) or upper division standing and instructor consent.

3 units

ZOOL 170. Ichthyology

Advanced study of systematics, distribution and natural history of the fishes of the world with emphasis on Pacific states forms.

Prerequisite: ZOOL 116.

Lecture 2 hour; lab/field 3 hours.

Offered only occasionally.

3 units

ZOOL 171. Herpetology

Advanced study of amphibians and reptiles world wide: natural history, phylogeny and behavior.

Prerequisite: ZOOL 116.

Lecture 2 hour/lab 3 hours and required field trips.

3 units

ZOOL 172. Ornithology

Advanced study of systematics, identification and biology of birds.

Prerequisite: ZOOL 116.

Lecture 2 hour/lab-field 3 hours.

Offered only occasionally.

3 units

ZOOL 173. Mammalogy

Advanced study of mammals.

Prerequisite: ZOOL 116.

Lecture 2 hour/lab-field 3 hours.

3 units

ZOOL 180. Individual Studies

Advanced lab work in special fields.

Prerequisite: Majors only or instructor consent.

Pre/Corequisite: BIOL 6.

Repeatable for credit

Credit / No Credit

1-4 units

ZOOL 186. Senior Thesis

Advanced laboratory or field research under supervision of faculty member, culminating in a senior thesis.

Prerequisite: Instructor consent.

Pre/Corequisite: BIOL 6.

Credit / No Credit

2-4 units

GRADUATE**ZOOL 298. Research**

Independent investigations.

Prerequisite: Instructor consent.

Corequisite: BIOL 6.

Repeatable for credit

Credit / No Credit

1-4 units

ZOOL 299. Master's Thesis or Project

Prerequisite: Admission to candidacy for the master's degree.

Corequisite: BIOL 6.

Repeatable for credit

Credit/No Credit/Report in Progress

1-4 units

Business

College of Business

Accounting and Finance

Business Tower 850
408-924-3460

Management Information Systems

Business Tower 250
408-924-7790

Marketing

Business Tower 750
408-924-3506

Organization and Management

Business Tower 650
408-924-3550

Graduate Programs

Business Tower 350
408-924-3420

Curricula

- BS, Business Administration, Concentration in Accounting
- BS, Business Administration, Concentration in Finance
- 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
- BS, Business Administration, Concentration in Accounting Information Systems
- BS, Business Administration, Concentration in Corporate Financial Management
- Minor, Business
- MBA, Master of Business Administration
- MS, Accountancy
- MS, Taxation
- MS, Transportation Management

Accounting and Finance

Professors

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Billy J. Campsey
Elizabeth Grace
Laura Ingraham
Elizabeth Jenkins
Frank Jones
Joseph E. Mori
Annette Nellen
Howard Turetsky
Janis K. Zaima, Chair

Associate Professors

Maretro Harjoto
Themis Pantos

Assistant Professors

Mary Calegari
Freddy Coronado
Richard Fu
Daoping (Steven) He
Marco Pagani
Jian Zhang

Management Information Systems

Professors

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

Associate Professors

Malu Roldan

Assistant Professors

Nitin Aggarwal
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Richard J. Burkhard
Subhankar Dhar
Shailaja Venkatsubramanyan
Hong Wang

Marketing

Professors

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David Czerwinski
Miriam G. Donoho
Marilyn Easter
Jeffrey A. Fadiman
Nancie L. Fimbel, Interim Dean
Kenneth C. Gehrt
Joseph J. Giglierano, Chair
Aharon Hishoosh
M. Jeffrey Kallis
Therese Louie
Michael Merz
Sak Onkvisit
Steven D. Silver
David E. Smith
Jacqueline S. Snell
Jerry L. Thomas

Dirk Jan Wassenaar

Richard A. Werbel

Associate Professors

Ronald E. Davis
Daniel Lynch
Mahesh Rajan

Assistant Professors

Jennifer Bechkoff
David Mease
Robert E. Sibley, Jr.
John C. Yi

Organization and Management

Professors

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Herman L. Boschken
Mary Yoko Brannen
Isaac Cohen
David Denzler
Ralph B. Edfelt
W. Mark Fruin
J. Leslie Jankovich
S. Lee Jerrell

William Yuying Jiang, Chair

Anne Lawrence
Arvinder P.S. Loomba
Stanley B. Malos
Asbjorn Osland
Joyce Osland
Taeho Park
Randall E. Stross
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Stuart J. Wells
George L. Whaley
Robert C. Wood

Associate Professors

Nancy Da Silva
Isabelle Lescent-Giles
Gita Mathur
Joel West
William B. Zachary

Assistant Professors

Dominie Garcia
S. Noorein Inamdar
Camille Johnson
Xiaohong Quan
Lauren Ramsay
Carol Reade
Simon Rodan
Min Shi
Meghna Virick
Chunlei Wang
Ming Zhou
Shu Zhou

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.

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 70; ECON 1A, 1B; ENGL 1B; BUS 10 (freshmen) BUS 20, 21, 80, 90, 91L. 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 70, ENGL 1B, BUS 20, and BUS 90 with grades of "C-" or better prior to any upper division business courses. Note: Accounting, AIS and Corporate Financial Management majors are not required to take BUS 21. Accounting majors must receive a "C" or better in BUS 20.

Upper Division Business Core and Concentration

After satisfying the lower division business and support requirements, students advance to upper division coursework 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. The following requirements apply to all majors seeking the BS – Business Administration degree.

Semester Units
General Education Requirements33
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 Education2
Preparation for the Major17
COMM 100W, ENGL 100WB or LLD 100WB (3); ECON 001A, ECON 001B, MATH 070 and ENGL 001B (14)

Lower Division Business and Support16
BUS 010 is recommended only for SJSU freshmen.
BUS 010, 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)

Business Concentration15-24
Most concentrations require 18 units. Those with heavy technical or certification requirements may require up to 24 units.

Electives0-10
Total Units Required120-126

**BUS 10 is required 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 Requirements33	
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 Education2	
Preparation for the Major17	
COMM 100W, ENGL 100WB or LLD 100WB (3); ECON 001A, ECON 001B, MATH 070 and ENGL 001B (14)	
Lower Division Business and Support10	
<i>BUS 010 is recommended only for SJSU freshmen.</i> 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 Courses15	
BUS 120A, BUS 121A, BUS 121B, BUS 123A and BUS 129A	
Major Electives9	
<i>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)</i>	
Electives1	
Total Units Required120	

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

Additional requirements for graduation: to qualify for a baccalaureate in business with an accounting concentration, all students must obtain a grade of "C" (2.0) or better in each of the following courses: BUS 20, 120A, 121A, 121B, 122A, and 123A, and achieve at least a 2.0 overall grade point average for these six courses.

BS – Business Administration, Concentration in Accounting Information Systems

	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 070 and ENGL 001B (14)	
Lower Division Business and Support	10
<i>BUS 010 is recommended only for SJSU freshmen.</i> 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 120E, BUS 124, BUS 127A, BUS 129A, BUS 129B	
Total Units Required	122

Additional requirements for graduation: to qualify for a baccalaureate degree in business with an accounting information systems concentration, all courses in the concentration must be completed with a "C" (2.0) or better grade. Any of these courses in which a grade of "C-" or below is earned must be repeated and completed with a grade of "C" or better.

BS – Business Administration, Concentration in Corporate Financial 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	17
COMM 100W, ENGL 100WB or LLD 100WB (3); ECON 001A, ECON 001B, MATH 070 and ENGL 001B (14)	
Lower Division Business and Support	10
<i>BUS 010 is recommended only for SJSU freshmen.</i> 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.*

Additional requirements for graduation: to qualify for a baccalaureate degree in business with a corporate financial management concentration, all courses in the concentration must be completed with a "C" (2.0) or better grade. Any of these courses in which a grade of "C-" or below is earned must be repeated and completed with a grade of "C" or better.

BS – Business Administration, Concentration in Finance

	Semester Units
General Education Requirements	33
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.	
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 070 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, BUS 127B, 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

Additional requirements for graduation: to qualify for a baccalaureate degree in business with a finance concentration, each of the following courses must be completed with a "C" (2.0) or better grade: BUS 170, 171A, 172A, and 173A. Any of these courses in which a grade of "C-" or below is earned must be repeated and completed with a grade of "C" or better (2.0).

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 070 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

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 coursework in a minor, either area studies or foreign language. 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 070 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

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 102, BUS 103A, BUS 141, BUS 142, BUS 144, BUS 145,

BUS 146, BUS 147, BUS 149, BUS 150, BUS 163, BUS 167, BUS 181, BUS 182, BUS 191, BUS 198

Electives 7

Total Units Required 120

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 070 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 and 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 102, BUS

103A, BUS 141, BUS 142, BUS 144, BUS 145,

BUS 146, BUS 147, BUS 149, BUS 150, BUS

163, BUS 167, BUS 181, BUS 182, BUS 191,

BUS 198

Electives 7

Total Units Required 120

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 "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 070 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) 18

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 118A, BUS 118B, BUS 118C, BUS 118W

Elective 1

Total Units Required 120

Additional requirements for graduation: to qualify for a baccalaureate degree in business 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. Any of these courses in which a grade of "C-" or below is earned must be repeated and completed with a grade of "C" or better (2.0).

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 070 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 18

Required Courses 12

BUS 134A, BUS 134B, BUS 138 and BUS 139

Additional Courses 6

Complete two 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 7

Total Units Required 120

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 "C-" or better. Marketing courses are those numbered in the BUS 130 – 139 sequence. Any of these courses in which a grade of "D+" or less is earned must be repeated and completed with a grade of "C-" or better.

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 193 (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.

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 Donald and Sally Lucas Graduate School of Business degree programs are accredited by AACSB International – The Association to Advance Collegiate Schools of Business.

Mission

The Donald and Sally Lucas Graduate School of Business 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 Donald and Sally Lucas Graduate School of 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. The MBA degree is available in both an-on-campus and off-campus format, with identical admission requirements, course work, faculty and student backgrounds. The MBA degree is also available in a one-year accelerated cohort format. The primary difference in programs is delivery mode.

1. The On-Campus MBA program is offered in a 16-week semester format, with students typically taking one or two courses each fall and spring semester. Depending on the student's undergraduate background and commitment, the MBA degree is typically completed in 36 months.
2. The accelerated Off-Campus MBA program is offered at the Donald and Sally Lucas Graduate School of Business offsite facility. It is offered on a year-round basis in consecutive eight-week sessions. Course work is very compressed and intensive. Students take only one course per eight-week session. Depending on the student's undergraduate background and commitment, the MBA is typically completed in 24 months. This program is non-state funded. Students pay a per-unit

tuition. (The state fee schedule does not apply to the accelerated Off-Campus MBA program).

3. The MBA-One is a one-year, full-time, daytime MBA program designed for non-working individuals who prefer an executive cohort style of learning. The lock-step program design allows the completion of the MBA degree in one year. It is offered at the Donald and Sally Lucas Graduate School of Business offsite facility. The MBA-One program is open to individuals from all undergraduate disciplines. This program is non-state funded. Students pay a per-unit tuition. (The state fee schedule does not apply to the MBA-One program.)
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 Donald and Sally Lucas Graduate School of Business offsite facility. This program is non-state funded. Students pay a per-unit tuition. (The state fee schedule does not apply to the MST program.)
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. This program is non-state funded. Students pay a per-unit tuition. (The state fee schedule does not apply to the MSTM program.)
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. Typically this program takes three years to complete. This program is non-state funded. Students pay a per-unit tuition. (The state fee schedule does not apply to the MBA/MSE program.)

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. Donald and Sally Lucas Graduate School of Business has alliances with business incubator partners in Silicon Valley. Students have an opportunity to work with international businesses and Silicon Valley entrepreneurial start ups.

Requirements for Admission to Classified Standing

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

1. Be a baccalaureate graduate of an accredited four-year college or university;
2. 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;
3. Have obtained a score of 500 or better on the Graduate Management Admission Test (GMAT), including scores above the 50th percentile in both the quantitative and verbal sections.
4. 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.
5. The completion of three undergraduate prerequisites. These classes are: Introduction to Microeconomics, Introduction to Macroeconomics, and Business Statistics. A student may be admitted prior to completion of these three classes, but will need to provide the Donald and Sally Lucas Graduate School of Business Program Office proof of completion by the end of their first year of study. If proof of completion is not provided by the end of the first year of study, either in the form of an official transcript from another institution, or notification of the grade from SJSU, the student will not be allowed to continue taking MBA classes.

Program of Study Requirements for the MBA Degree

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

1. Business Prerequisite Courses are:

- Introduction of Macroeconomics (at SJSU this course is ECON 1A, Principles of Economics Macro)
- Introduction to Microeconomics (at SJSU this course is ECON 1B, Principles of Economics Micro)
- Bus Statistics (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 Studies and Research website at www.sjsu.edu/gradstudies.

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 coursework 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).	
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 12 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. 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; computer score of 213 or better; or an internet-based score of 80 or better. Students will also be required to submit a written essay and three 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 does not require any business course work prior to admission to the MSA program.

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 Studies and Research website at www.sjsu.edu/gradstudies.

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 coursework. Students who receive grades of "C-", "D", "F", or "U" in any business graduate course must repeat that course to achieve a grade of "C" or better. 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 1A-B, HUM 2A-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 coursework (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 Studies and Research website at www.sjsu.edu/gradstudies.

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 coursework 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 15
BUS 223A, BUS 223B, BUS 223C and
BUS 223F (12); BUS 223D or BUS 223E (3)

Applied Taxation Elective Courses 15
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

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	21
MTM 201, MTM 202, MTM 203, MTM 214, MTM 215, MTM 217 and MTM 290	
Electives	9
Complete three courses from: MTM 283, MTM 295, BUS 256, BUS 286, URBP 255, URBP 256, PADM 213, PADM 214	
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 Studies and Research website at www.sjsu.edu/gradstudies.

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 coursework from other institutions is not acceptable.

Other University Requirements

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

Courses

BUSINESS

LOWER DIVISION

BUS 001. Introduction to Hospitality Management

See HRTM 001.

3 units

BUS 010. Discovering Business

Simulates setting up a small business to explore the many facets of an enterprise (marketing, accounting, finance, management, information systems, etc.). Through self-assessment and readings, directs students toward career paths that best reflect their personal aptitudes and interests.

Prerequisite: Highly recommended for SJSU freshman business majors, optional for others.

3 units

BUS 020. Financial Accounting

Accounting postulates and principles; application of accounting theory to accumulate and summarize financial data; critical analysis and interpretation of financial statements.

Prerequisite: MATH 70, sophomore status recommended, business majors only.

CAN BUS 2

3 units

BUS 020N. Survey of Accounting

Introduction to accounting theory and techniques for business minors and non-business majors. Principles are applied to accumulating and summarizing financial data; critical analysis and interpretation of financial statements.

Prerequisite: Sophomore status recommended, non-business majors only.

3 units

BUS 021. Managerial Accounting

Uses of accounting data for managerial decision-making. Topics include: cost accumulation for product costing; cost structure for control and motivation; cost-volume-profit relationships; profit planning; standard costing; flexible budgets; and relevant costs for non-routine decisions.

Prerequisite: BUS 20 or BUS 20N.

CAN BUS 4

3 units

BUS 025. The Digital World and Society

See CMPE 025.

3 units

BUS 080. Legal Environment of Business

Understand the judicial system and dispute resolution with emphasis on the role of law in purchasing, contracting and administering a business as it impacts the firm's constituencies and society as a whole.

Prerequisite: Sophomore status.

CAN BUS 12

3 units

BUS 090. Business Statistics

In terms of theory and application: collection and presentation of data; measures of central values and spread; probability as a measure of uncertainty; sampling and sampling distribution of the sample mean; confidence intervals; hypothesis testing; regression and correlation.

Prerequisite: BUS 91L, MATH 70.

3 units

BUS 091L. Computer Tools for Business

An overview of computer hardware and software concepts and common operating system functions. Instruction in the use of microcomputer-based word processing, presentation graphics and spreadsheet productivity tools. Lab meets for 5 weeks.

Credit / No Credit
1 unit

BUS 092. Introduction to Business Programming

Analysis of business problems to design and implement the software component of an information system. Emphasis on structured design and programming. Introduction to visual programming languages.

Prerequisite: BUS 91L.
3 units

UPPER DIVISION

BUS 102. Fundamentals of Hotel Operations

See HRTM 102.
3 units

BUS 103A. Facilities Management

See HRTM 103.
3 units

BUS 106. Strategic Management in Hospitality Recreation and Tourism

See HRTM 106.
3 units

BUS 107. Law and Ethics in Hospitality Recreation and Tourism

See HRTM 107.
3 units

BUS 110A. Fundamentals of Management Information Systems

Prepares students for upper division MIS courses by providing an overview of the strategic and managerial issues involved in the design, implementation, and maintenance of information systems. Includes an introduction to business application programming.

Prerequisite: BUS 92, upper division standing.
3 units

BUS 110B. Systems Analysis and Design

Introduction to systems development methodologies, techniques and tools. Emphasis on enterprise, process, data and object modeling techniques. Students use UML and prototyping tools to analyze and design an information system.

Prerequisite: BUS 92, upper division standing.
3 units

BUS 111. Networking and Data Communications

Emphasis on the concepts, architectures, components, protocols and standards for message movement within information networks. Uses the network design process to develop understanding of business and information technology perspectives.

Prerequisite: A grade of "C" or better in BUS 110A.
3 units

BUS 112. Database Management Systems

Intermediate database management systems and procedures, stressing the design and development of efficient business information systems. Emphasis on data modeling, data integrity, SQL and implementation of a database application.

Prerequisite: A grade of "C" or better in BUS 92 or BUS 93 or BUS 110B.
3 units

BUS 113. Advanced Business Programming

Development of complex business applications; integration of structured programming methodologies and visual programming languages.

Prerequisite: COMM 100W or ENGL 100WB or LLD 100WB, a grade of "C" or better in BUS 111 and BUS 112, senior status.
3 units

BUS 113J. Advanced Business Programming in Java

Students gain experience with developing complex business application programs in the electronic commerce environment with an emphasis on the integration between structured and object oriented programming. Applications will be built for Unix and Windows platforms using the Java programming language.

Prerequisite: COMM 100W or ENGL 100WB or LLD 100WB, a grade of "C" or better in BUS 111 and BUS 112, senior status.
3 units

BUS 114. Advanced Systems Analysis and Design

Advanced topics in systems development, including CASE tools, object technologies, enterprise analysis and project management.

Prerequisite: COMM 100W or ENGL 100WB or LLD 100WB, a grade of "C" or better in BUS 111 and BUS 112, senior status.
3 units

BUS 115. Advanced Networking and Data Communications

Integration of telecommunications and database management systems concepts in a distributed information systems environment. Emphasis on information systems architectures, systems integration, open systems and other advanced topics.

Prerequisite: COMM 100W or ENGL 100WB or LLD 100WB, a grade of "C" or better in BUS 111 and BUS 112, senior status.
3 units

BUS 116. Advanced Database Management Systems

Advanced topics in database management, including data analysis and design, SQL and client/server database development tools and applications.

Prerequisite: COMM 100W or ENGL 100WB or LLD 100WB, a grade of "C" or better in BUS 111 and BUS 112, senior status.
3 units

BUS 118A. Topics in MIS: Network Design and Management

Investigation of network infrastructural design issues coupled with hands-on development and simulation-based evaluations of Novell NetWare/NT/Intranet network projects.

Prerequisite: COMM 100W or ENGL 100WB or LLD 100WB, a grade of "C" or better in BUS 111 and BUS 112, senior status.
Repeatable for credit
3 units

BUS 118B. Executive Support and Expert Systems

Investigation of ESS/ES theory and application. Design, development and evaluation of real-world ESS/ES prototype systems in Excel/Visual Basic/etc.

Prerequisite: COMM 100W or ENGL 100WB or LLD 100WB, a grade of "C" or better in BUS 111 and BUS 112, senior status.
3 units

BUS 118C. Topics in MIS: System Security and Operating Systems

Operating systems, system controls, security and privacy issues. Emphasis on systems programming (e.g., Unix scripts) and concepts and skills required to develop secure information systems.

Prerequisite: COMM 100W or ENGL 100WB or LLD 100WB, a grade of "C" or better in BUS 111 and BUS 112, senior status.
Offered only occasionally.
3 units

BUS 118S. Special Topics in MIS

Special topics to augment regularly scheduled electives. Course is repeatable for credit, maximum 9 units.

Prerequisite: BUS 110, BUS 111, BUS 112, COMM 100W or ENGL 100WB or LLD 100WB.
Repeatable for credit
3 units

BUS 118W. Web Based Computing

Explores Web applications for personal, E-Commerce and corporate computing. Covers essentials of WWW protocols. Students will learn to design and program both client and server-side applications using HTML and extensions, JavaScript, Perl, VBScript, Active Server Pages, database connections, XML, Java.

Prerequisite: COMM 100W or ENGL 100WB or LLD 100WB, a grade of "C" or better in BUS 111, BUS 112, senior status.
3 units

BUS 119A. Practicum in MIS

Students, working in teams, will complete an MIS project for a community organization. Requirements include using industry-standard project management tools and methods, interacting with project stakeholders in a professional manner, and applying appropriate technical skills and processes to the project.

Prerequisite: COMM 100W or ENGL 100WB or LLD 100WB; and a grade of "C" or better in BUS 111 and BUS 112, senior status.
3 units

BUS 119B. Business Strategy and Information Systems

Analysis of effective use of information systems and technology for competitive advantage by a business organization for enterprise, business-to-business, and E-Commerce computing. Emphasis on integration of information systems and technology with business strategy, financial justification, personnel and organizational considerations.

Prerequisite: COMM 100W or ENGL 100WB or LLD 100WB, a grade of "C" or better in BUS 111 and BUS 112, senior status, taken in last semester before graduation.
3 units

BUS 119H. Honors Practicum in MIS

Honors student teams will work to complete an MIS project for a community organization. Requirements include using industry-standard project management tools and methods, interacting with project stakeholders in a professional manner, and applying appropriate technical skills/processes to the project.

Prerequisite: COMM 100W or ENGL 100WB or LLD 100WB; BUS 111 and BUS 112 (with a grade of "C" or better); senior standing.
3 units

BUS 120A. Accounting Information Systems

Documentation, flow and processing of accounting information in business organizations; related principles of internal control; system design principles. Computerized and non-computerized procedures are used for processing.

Prerequisite: BUS 20 with a minimum grade of "C".
3 units

BUS 120B. Advanced AIS and IS Risk Assessment

Hands-on project-oriented computer lab to develop working knowledge and skills in using Microsoft Excel and Access as application development tools. Students design a prototype accounting system and generalized audit module prototype assessing integrity of previously designed databases.

Prerequisite: BUS 120A and COMM 100W or ENGL 100WB or LLD 100WB with a minimum grade of "C" or better in both.

3 units

BUS 120C. Business Network Environment and Controls

Introduction to current network arrangements in small, medium and large corporations, including hardware/software components used to control the integrity, and access of networks. Internet interfaces including TCP/IP basics and network configurations. A practical NT domain and its administration will be included.

Prerequisite: BUS 120B and BUS 120G with a minimum grade of "C" in each.

3 units

BUS 120D. Platforms Security and E-Commerce Controls

Students will be exposed to real life audit environment cases. Students will apply the EDP auditing techniques of integrated audit risk management, auditing of platforms, applications, and network as appropriate. Network security, including telecommunications, firewall, encryption, and other current IT Audit issues will be included as part of the IT discussion.

Prerequisite: BUS 120B, BUS 120C and BUS 120G with a minimum grade of "C" in each.

3 units

BUS 120E. Current Topics in IT Audit

Students will be exposed to overall functional capabilities of the security of UNIX, NT, and Novell platforms, and how to audit the security of these platforms. Students will also be exposed to the E-Commerce IT environments and setting up of an E-Commerce website and security considerations.

Prerequisite: BUS 120B, BUS 120C and BUS 120G with a minimum grade of "C" in each.

3 units

BUS 120G. Programming and Systems Development in AIS

The process and technical elements of structured programming and current techniques in accounting systems development. Programming topics include object and business reporting languages. Systems development topics include requirements analysis, functional specification, system design, implementation, testing and maintenance.

Prerequisite: BUS 20 with a minimum grade of "C".
3 units

BUS 121A. Intermediate Accounting I

Principles, control and theory of accounting for assets; correction of prior year's earnings; measurement and determination of income. Projects involving spreadsheet software required.

Prerequisite: BUS 20 with a minimum grade of "C".
3 units

BUS 121B. Intermediate Accounting II

Principles, controls, and theory of accounting for liabilities and equities; preparation, utilization, and analysis of cash flow and fund statements; financial ratios and statistical analysis of financial statements accounting data. Projects involving spreadsheet software required.

Prerequisite: BUS 121A (with minimum grade of "C").
3 units

BUS 122A. Management Accounting and Control Systems

Examination of the nature, objectives and procedures of cost management as applied to product and service costing, decision-making and cost planning and control systems.

Prerequisite: BUS 20 with a minimum grade of "C".
3 units

BUS 122B. Advanced Management Accounting and Control Systems

Examination of contemporary issues and emerging practices in cost management. Topics include strategic cost management, activity-based cost management, life-cycle cost management, target costing, quality costing management and value chain-analysis.

Prerequisite: BUS 122A and COMM 100W or ENGL 100WB or LLD 100WB with a minimum grade of "C" in both.

3 units

BUS 123A. Tax Factors of Business and Investment Decision

Introductory course in taxation with emphasis on certain themes that pervade the federal income tax system and its impact on business. Property transactions, deferral techniques, accounting periods, accounting methods and research techniques with emphasis on corporations.

Prerequisite: BUS 20 and COMM 100W or ENGL 100WB or LLD 100WB (with a minimum grade of "C" in both).

3 units

BUS 123C. Taxation of Individuals and Pass Through Entities

Emphasis on the unique factors involved in taxation of individuals and pass-through entities (partnerships, S corporations, estates and trusts). Taxation of the transfer of wealth through gifts and inheritance.

Prerequisite: BUS 123A with a grade of "C" or better.
3 units

BUS 124. Forensic Accounting

This course will examine the various frauds that are perpetrated on companies and discuss ways the accountant can uncover the frauds. The criminal justice system will be reviewed and the various litigation-support functions provided to attorneys by accountants will be discussed.

Prerequisite: BUS 20; COMM 100W or ENGL 100WB or LLD 100WB; BUS 121A and BUS 121B with a minimum grade of "C" in each.

3 units

BUS 125. Special Financial Reporting Topics

Analysis of specialized and emerging accounting topics (such as interim reporting, deferred taxes, post-employment benefits and new FAS pronouncements) with emphasis on research, application and analytical skills.

Prerequisite: COMM 100W or ENGL 100WB or LLD 100WB; BUS 121A and BUS 121B (with minimum grade of "C" in each).

3 units

BUS 126. Advanced Accounting

Accounting for multi-unit operations: consolidated reporting issues, transfer pricing issues, globalization issues (foreign tax structures, organizational forms, and international accounting) translating foreign currency transactions and operations, hedging foreign currency exposures, goodwill, and business combinations. Extensive use of spreadsheets (Excel)

Prerequisite: COMM 100W or ENGL 100WB or LLD 100WB; BUS 121A and BUS 121B (with minimum grade of "C" in each).
3 units

BUS 127A. Honors Practicum in Corporate Financial Management

Corporate sponsored projects in accounting and finance. Students are assigned to a host company and are required to work with the host company and faculty advisor on a topic in financial management. A report will be presented. Students are admitted based on an average 3.0 GPA in four prerequisite courses.

Prerequisite: COMM 100W (or ENGL 100W or LLD 100W), BUS 121A, BUS 121B, BUS 122A, and BUS 170 with a minimum grade of "C" in each and instructor approval.

Repeatable for credit
3 units

BUS 127B. Advanced Honors Practicum

Course involves advanced corporate sponsored projects in accounting and finance. Students are assigned to supervisory personnel at the host company under the advisement of the instructor. Course is repeatable for credit for a total of 6 units.

Prerequisite: Declared major in Accounting, Finance, AIS or Corporate Financial Management and instructor consent.

Repeatable for credit
3 units

BUS 128. Accounting for Nonprofit Organizations

Principles, objectives and methods of accounting for governmental and other nonprofit organizations.

Prerequisite: COMM 100W or ENGL 100WB or LLD 100WB and BUS 121A (with minimum grade of "C" in both).

3 units

BUS 129A. Financial Auditing

Emphasis on traditional role of a test function-rendering of an opinion or published financial statement. The public accounting profession, generally accepted auditing standards, professional ethics, auditing procedures, work paper preparation and report writing. Projects involving spreadsheet software required.

Prerequisite: BUS 120A, BUS 121A, BUS 121B and BUS 122A with a minimum grade of "C" in each.
3 units

BUS 129B. Operational Auditing

Study of professional and technical aspects of internal and operational auditing with emphasis on concepts, ethical conduct and significance in preparation/implementation of the audit and its findings. Effectiveness and efficiency of audits in industry and not-for-profits will be covered.

Prerequisite: COMM 100W or ENGL 100WB or LLD 100WB; BUS 120A; BUS 121A; BUS 121B and BUS 122A (with minimum grade of "C" in each).

3 units

BUS 130. Introduction to Marketing

Analysis of marketing opportunities; planning of marketing programs with emphasis on product, price, promotion and distribution; control of the marketing effort; social and ethical responsibilities of marketing.

Prerequisite: Junior standing.

Recommended: COMM 100W or ENGL 100WB or LLD 100WB.

3 units

BUS 131A. Business to Business Marketing

Marketing of goods, services and ideas to businesses. Examines distribution, pricing, promotion, marketing research and planning. Emphasizes strategy development and the decision-making processes of customers.

Prerequisite: BUS 130.

3 units

BUS 131B. Retail Marketing Management

Special issues faced and approaches taken in retailing. Topics include store location, merchandise selection and display, financial management, promotion, store layout and image.

Prerequisite: BUS 130.

Offered only occasionally.

3 units

BUS 131C. Marketing of High Technology

Course is for students who have exposure to Marketing and who want to apply marketing concepts and methods in a high technology situation. A hands-on course as much as possible. Toward the end students will pursue individual group projects and several in-class exercises.

Prerequisite: BUS 130.

3 units

BUS 131D. Marketing in New Ventures

Examines and explores the roles of marketing in the new venture. Focuses on learning conceptual framework for understanding customers, designing appropriate marketing activities, making marketing decisions and addressing marketing problems in building a new venture. Students analyze cases and undertake projects.

Prerequisite: BUS 130.

3 units

BUS 132A. Marketing Channels and Institutions

Study of the interrelationship of channel members (vendors, manufacturers, wholesalers, retailers) and the collaborative nature of successful channels. The impact of the legal environment in marketing channels is examined.

Prerequisite: BUS 130.

3 units

BUS 132B. Business Logistics

Logistics in the process of planning, implementing and controlling the efficient, effective flow and storage of goods, services and related information from the point of origin to the point of consumption for the purpose of conforming to customer requirements.

Prerequisite: BUS 130 and BUS 190.

3 units

BUS 133A. International Marketing

Impact of the international business environment on the development of marketing strategy and marketing mix, with emphasis on development of a global perspective and cultural sensitivity. Also covers international trade, importing and exporting.

Prerequisite: BUS 130.

3 units

BUS 133B. Relationship Marketing: Pacific Rim

Why not use PacRim marketing methods in PacRim markets? Americans tend to be short-term, sales-oriented. Asians tend to be relationship oriented. Why not master both marketing methods? Focus: Launching a "start-up".

Topics: PacRim forms of product-launch, sales presentation, negotiation, promotion, PacRim risks.

Prerequisite: BUS 130.

3 units

BUS 133C. International Marketing: Developing Nations

Why not use Third World marketing methods in Third World markets? Russian, African and Islamic regions pose special risks for U.S. marketers. Focus: Third World ways to cope. Topics: Bribery, corruption, terrorism, smuggling, as well as Anti-Americanism, Market-Communism, Fundamentalist Islam.

Prerequisite: BUS 130.

3 units

BUS 133E. Marketing to Eastern/Western Europe

To market in Europe, one must learn how Europeans market. Developed and evolved over centuries, European business methods are complex, subtle, and largely unknown to America. This course provides insights into these methods.

Prerequisite: BUS 130

3 units

BUS 134A. Consumer Behavior

An examination of psychological, sociological, and other factors that affect customer behavior. These factors are examined in an effort to help businesses and other organizations to accurately assess and effectively satisfy customer needs.

Prerequisite: BUS 130, COMM 100W or ENGL 100WB or LLD 100WB.

3 units

BUS 134B. Integrated Marketing Communications

Focus is on design and delivery of marketing messages to targeted audiences. Analysis and planning seeks integration of messages delivered through advertising, sales promotion, personal selling, public relations, and other communication methods.

Prerequisite: BUS 130 and COMM 100W or ENGL 100WB or LLD 100WB.

3 units

BUS 134C. Online Marketing

Concerns current and future issues in marketing and electronic commerce conducted in online environment, including the Internet and World Wide Web.

Prerequisite: BUS 130.

3 units

BUS 135. Sales Management

Teaches skills in personal selling with guidelines for designing and managing the sales function. Topics include advanced sales techniques, high impact questioning methodologies, closing techniques and managing objections, account and territory planning and management, resource planning and management, and sales compensation programs.

Prerequisite: BUS 130.

3 units

BUS 136. Product Development

Integrative analysis of product development related to life-cycle management. Emphasis is on new product/service planning.

Prerequisite: BUS 130.

3 units

BUS 137D. Special Topics in Decision Sciences

Special topics in the management of decision sciences or in the decision sciences environment. The instructor may choose to address one special topic, theme, or several related topics.

Prerequisite: BUS2 130.

3 units

BUS 137H. Marketing Honors Practicum

Course involves sponsored projects in the area of Marketing. Students are assigned to a host company and are required to work with the host company and faculty advisor on a topic in Marketing. A report will be presented.

Prerequisite: Instructor consent.

Repeatable for credit

3 units

BUS 137S. Special Topics in Marketing

Special topics in the management of marketing or in the marketing environment. The instructor may choose to address one special topic, theme, or several related topics. Requires one or more projects, at instructors discretion.

Prerequisite: BUS2 130.

3 units

BUS 138. Marketing Research

Fundamentals of empirical study in marketing, including hypotheses formulation, testing, and the basis of inference. Questionnaire and experimental design, attitude measurement, sampling and data collection, and analysis are emphasized along with applications to marketing decision-making.

Prerequisite: BUS 90, BUS 130, Recommend: COMM 100W or ENGL 100WB or LLD 100WB.

3 units

BUS 139. Marketing Management

Marketing management is a capstone course whose purpose is to provide the student with the opportunity to demonstrate and integrate the capabilities acquired from the prerequisite courses.

Prerequisite: BUS 130, BUS 134A, BUS 134B, BUS 138, COMM 100W or ENGL 100WB or LLD 100WB.

Recommend: BUS 190 is strongly recommended.

3 units

BUS 140. Fundamentals of Operations Management

Familiarizes students with processes that transform inputs into finished goods and services; helps students understand the importance of operations management and how it interacts with other parts of the organization; develops skills in applying appropriate analytical tools to business operations challenges.

3 units

BUS 141. Materials Management

Comprehensive survey of forecasting, inventory management (including just-in-time), purchasing, supplier relations, warehousing (tiered, centralized, decentralized) and distribution methods. Make-or-buy analysis and specification/standardization techniques.

3 units

BUS 142. Total Quality Management

Holistic approach to managing quality: interaction of production design, work design and the manufacturing process. International view and roles qualitative and quantitative techniques play in successful quality management programs.

3 units

BUS 143. Business Management and Urban Planning Topics

See URBP 143.

Repeatable for credit

3 units

BUS 144. Supply Chain Management

Addresses concepts/tools for effective and efficient management of supply chains. Topics include materials planning/control, sourcing strategy, strategic alliances, information technology role, quality/customer issues, inventory management, and distribution/logistics management.

3 units

BUS 145. Global Operations Management

Studies operations management issues unique to manufacturers with extensive international operations. Educational objectives are to develop an understanding of: the strategic tradeoffs associated with global operations, total supply chain management and the economics of transnational logistics.

3 units

BUS 146. Project Management

Project management from both strategic and operational points of view. Quantitative methods include project planning, budgeting, evaluation, selection, scheduling and control. Qualitative methods include project organization structure, staffing and team building. Role and responsibilities of the project manager and interfaces with other managers.

3 units

BUS 147. Service Operations Management

Develops skills in setting formal standards for product attributes and operating procedures that comprise service experience. Categories of services; indirect and direct consumption. Psychological/social characteristics of the consumer/server encounters, enhancing ability to monitor service quality. Total quality management.

3 units

BUS 148. E-Commerce Management

Includes all aspects of management of e-commerce businesses. Topics include business planning, business-to-business and business-to-consumer sectors, entrepreneurship, and small business management.

3 units

BUS 149. Negotiation and Conflict Resolution

Provides conflict resolving and negotiation techniques. Case studies demonstrate applications of these methods in real world business, personal, interpersonal and international situations. Emphasis on acquiring and improving skills.

3 units

BUS 150. Fundamentals of Human Resource Management

Theories, concepts and processes of human resource management; specific topics include EEO, employee motivation, job analysis and work design, strategic human resource planning, recruitment and selection, talent assessment and development, performance management, compensation and benefits, OSH, and employee rights and discipline.

Prerequisite: BUS 91L or instructor consent.

3 units

BUS 151. Labor Relations

Private sector union-management relations; labor history, basic labor economics. Legislative, judicial, administrative issues in collective bargaining; contract negotiations, grievance procedures, dispute resolution. Overview of public sector collective bargaining and comparative labor relations. Current trends, including labor-management cooperation.

3 units

BUS 152. Human Resource Information Systems

Examines the strategic role of Human Resource Information Systems (HRIS) in the effective management of organizations; needs analysis, criteria for selection and evaluation of software tools for HR decision-making; HRIS issues in Internet, privacy, security, system integration, expert systems.

Prerequisite: BUS 150 or instructor consent.

3 units

BUS 153. Management of Diversity

Cross-cultural differences in effective HR management; organizational culture, cross-cultural communication, opportunity structures, organizational change; legal compliance and planning models such as Equal Employment Opportunity and Affirmative Action; conflict resolution strategies; dealing with internal and external compliance agencies.

Prerequisite: BUS 150 or instructor consent.

3 units

BUS 154. Workforce Planning, Staffing and Training

Examines basic concepts, strategies and current issues in recruitment, talent acquisition, selection and training. Involves use of computer tools to analyze impacts of legal compliance, diversity, technology, outsourcing, restructuring and downsizing on effective management of human resources.

Prerequisite: BUS 150 and COMM 100W or ENGL 100WB or LLD 100WB.

3 units

BUS 155. Performance Management and Development

Assessment and performance management of individuals, groups and organizations in a rapidly changing environment. Explores need for change management skills such as organizational development, career development and coaching to assess and improve the talent base of organizations. Project required.

Prerequisite: BUS 150, COMM 100W or ENGL 100WB or LLD 100WB.

3 units

BUS 156. International Issues in Human Resource Management

Personnel practices in international context; cross-cultural management, human resource planning, recruitment and selection, expatriation/repatriation, training, performance appraisal, compensation and benefits, labor relations as experienced by multinational corporations; comparative human resource management.

Pre/Corequisite: BUS 150 or instructor consent.

3 units

BUS 157. Legal Issues in Human Resource Management

Legal aspects of the employment relationship, including employment at will; contract, privacy, public policy, and whistleblower exceptions; EEO and affirmative action; prohibitions against discrimination and harassment; arbitration, trade secrets and non-competition agreements; occupational safety/health; compensation, benefit and family leave laws. Project required.

Prerequisite: BUS 80, BUS 150 and COMM 100W or ENGL 100WB or LLD 100WB.

3 units

BUS 158. Compensation and Reward Systems

Theories and practices of compensation and benefits; strategies to establish and administer equitable pay structures; job analysis, and evaluation, salary surveys, pay and motivation, skill-based pay systems, long-term and short-term performance plans, merit increase, bonus, stock options, profit-sharing, executive compensation and computer tools in compensation.

Prerequisite: BUS 91L and BUS 150.

3 units

BUS 159. Senior Seminar in Human Resource Management

Extension and integration of student knowledge, skills and abilities in strategic HRM; critical analysis of current HRM issues; exploration of HR career options; analysis of existing organization to develop methods of improving HRM decision-making in a real-world setting.

Prerequisite: COMM 100W or ENGL 100WB or LLD 100WB; BUS 150; BUS 157 and BUS 158.

Restricted to Human Resource Management majors with graduating senior status.

3 units

BUS 160. Fundamentals of Management and Organizational Behavior

Provides a foundation for major topics in management and organizational behavior by surveying theories and practices relating to managerial roles, organizational cultures, fundamental strategic issues, planning, team building, communication, motivation, leadership, decision-making, control, structure and change.

3 units

BUS 161A. Applied Organizational Behavior

Focuses on high-level application, analysis, synthesis and evaluation of group dynamics, interpersonal communication, motivation, leadership, perception and attitudes, individual power and politics, conflict and stress management. In-depth emphasis on key theories plus interpersonal managerial skills.

Prerequisite: COMM 100W or ENGL 100WB or LLD 100WB.

3 units

BUS 161B. Organizational Theory, Design and Change

Managing organization-wide structural and cultural changes leading to designs that enhance organizational effectiveness. Change issues of managing growth, resistance, intervention phases, crisis management, intergroup conflict/power are combined with design issues of balancing innovation and predictability, decentralization and centralization.

Prerequisite: COMM 100W or ENGL 100WB or LLD 100WB and BUS 161A.

3 units

BUS 162. International and Comparative Management

Management functions and practices in an international context; comparison of management and business practices from various political and cultural perspectives; emphasis on what managers need to be aware of in order to perform in the international environment.

Prerequisite: COMM 100W or ENGL 100WB or LLD 100WB, BUS 187 or instructor consent.

3 units

BUS 163. Management Issues in High Technology Companies

Provides an overview of a wide variety of key managerial concerns, industry knowledge and management techniques that are especially relevant in high technology companies. Such organizations compete within an environment characterized by rapid technological change and a high degree of uncertainty.

Prerequisite: Senior standing.

3 units

BUS 164. Strategies in High Technology Companies

Examines strategies for companies within high technology industries, focusing on how to anticipate, identify and exploit such technological change for competitive advantage. Technological change creates opportunities for new industries and products, but at the same time renders obsolete existing company capabilities.

Prerequisite: BUS 161A.

Repeatable for credit

3 units

BUS 166. Business and Society

Analysis of the American business system in terms of socio-economic and political constraints imposed upon business organizations by external, physical, legal, political, social and economic environments. Special reference to ethical issues in business, corporate social responsibility, profit maximization and countervailing powers in a pluralistic society.

Prerequisite: COMM 100W or ENGL 100WB or LLD 100WB.

3 units

BUS 167. Managing Environmental Issues

The management of environmental issues, including the relationship of business to the natural environment; the public policy context of management decision-making; and the greening of the corporation and implications for strategic management, operations, human resources, marketing and accounting.

3 units

BUS 168. Global Business and Human Rights

Examines the implications of global business for human rights; the costs and benefits of globalization to various stakeholders; the institutional context within which global business is transacted; and the proliferation of international codes governing human rights. Includes a series of cases that focus on the human rights impacts of business practices in a range of industries and regions of the world.

Repeatable for credit

3 units

BUS 169A. Honors Seminar

This course will introduce some of the seminal theories in management and related fields. The seminar will provide a variety of views on organizations, organizational life and the way organizations function. The course will be cross-disciplinary, drawing on readings about organizations from a variety of sources and disciplines. Students will be required to apply theoretical concepts to their own work, field study, or internship experiences.

Prerequisite: BUS 160 or BUS 161B.

3 units

BUS 169B. Honors Practicum in Organization and Management

Second part of a two-semester honors program sequence. Student teams will work on a project sponsored by a company or other organization, under the supervision of the sponsor and the instructor. Teams will present their final report to the sponsor.

Prerequisite: BUS 160 or BUS 161A and permission of the instructor.

3 units

BUS 170. Fundamentals of Finance

The finance function and its relationship to other decision-making areas in the firm; the study of theory and techniques in acquisition and allocation of financial resources from an internal management perspective.

Prerequisite: BUS 21 or BUS 122A, ECON 1A, ECON 1B and BUS 90.

3 units

BUS 171A. Financial Institutions and Markets

Study of financial markets and institutions that operate in them. Examinations of money and capital markets, interest rates and financial institutions, both depository and non-depository. Emphasis on past, current and future industry and regulatory authorities.

Prerequisite: BUS 170 (with minimum grade of "C").

3 units

BUS 171B. Commercial Banking

Asset/liability management principles and decision experience in banking investment policy, loan policy, money desk operations, and corporate planning. Industry historical implications for banking policy and current applications via an interteam computer simulation exercise.

Prerequisite: COMM 100W or ENGL 100WB or LLD 100WB and BUS 171A with a minimum grade of "C" in both.

3 units

BUS 172A. Investment Analysis

Procedures and tools necessary to evaluate investment variables, determine value and analyze risk/return characteristics of equity, fixed income securities, and alternative individual investments. Emphasizes responsible decisions and provides background for portfolio analysis.

Prerequisite: BUS 170 (with minimum grade of "C").

3 units

BUS 172B. Portfolio Management

Basic procedures and analytical tools necessary to construct, analyze, evaluate and revise investment portfolios or groups of assets, including computerized portfolio models. Approach and content consistent with objectives of Chartered Financial Analyst (CFA) program.

Prerequisite: COMM 100W or ENGL 100WB or LLD 100WB and BUS 172A with a minimum grade of "C" in both.

3 units

BUS 172C. Futures and Options

The use of derivatives for risk management by individuals, banks and corporations. The functioning of the futures and options markets for equities, fixed income and commodities. Option valuation models; Black-Scholes and beyond. Risk arbitrage. Applications in personal investment strategies.

Prerequisite: BUS 170 and BUS 172A with a minimum grade of "C" in each.

3 units

BUS 173A. Financial Management: Theory and Policy

From the financial manager's perspective, considerations and alternatives for maximizing a firm's value. Tools for understanding what determines value and what managerial actions can alter value, by combining theory with practical knowledge of marketplace limitations.

Prerequisite: BUS 170 (with minimum grade of "C").

3 units

BUS 173B. Problems in Financial Management

Advance study of business case materials, including assessment of financial condition; projection of capital requirements; and analysis of decisions pertaining to working capital, capital expenditures, financing, capital structure, dividends, mergers and reorganization.

Prerequisite: COMM 100W or ENGL 100WB or LLD 100WB and BUS 173A with a minimum grade of "C" in both.

3 units

BUS 173C. Small Business Finance

Basic principles of finance applied to actual small businesses, including incorporation, profit planning, cash flow analysis, use of computers, capital budgeting, cash and receivables management, debt versus equity, alternative forms of short and long term financing and valuation principles.

Prerequisite: BUS 173A (with minimum grade of "C").

3 units

BUS 174. Risk Management and Insurance

Principles and applications of risk determination and measurement in a firm's operations. Using cases, evaluate needs for insurance purchases or alternative risk handling techniques.

Prerequisite: BUS 170.

3 units

BUS 175. Real Estate Finance

Real estate financing from the viewpoint of borrower and lender, financing mathematics, legal aspects of lending, appropriate financial instruments, taxes and real estate, loan cost analysis, loan valuation, development and assumability. Mortgage markets/institutions considered together with alternative financing techniques for various types of properties.

Prerequisite: BUS 170 (with minimum grade of "C").

3 units

BUS 177. International Business Finance

Focuses on the determination of exchange rates and the workings of international financial markets. Develops exchange rate parity relationships and techniques for hedging exchange rate risk. Strategies for managing working capital, long term debt, fixed asset selection and international financial reporting are also examined.

Prerequisite: BUS 170 (with minimum grade of "C").

3 units

BUS 179B. Selected Topics in Business Finance

Extensive investigation of selected topics with major emphasis on integration of finance theory and practice within a current business context.

Prerequisite: BUS 173A (with minimum grade of "C").

3 units

BUS 180. Individual Studies in Business

Individual work on special topics by arrangement. Business majors only. Petition and plan of study must have consent of instructor and Chairperson in the department of concentration.

Credit / No Credit

1-6 units

BUS 181. Introduction to Entrepreneurship

Will offer an insight into the characteristics of entrepreneurs, the approaches they use to create, identify and evaluate opportunities for new ventures and the skills that are needed to start and manage new ventures and develop a preliminary business plan.

Prerequisite: COMM 100W or ENGL 100WB or LLD 100WB; BUS 130; BUS 21 or instructor consent.

Repeatable for credit

3 units

BUS 182. Business Plans for New Ventures

An integrative course involving teamwork to prepare complete plans for starting a new business. This will require analyzing the industry and potential market, the competitive advantage of the business proposition, human and financial resource requirements and the founders' skills.

Prerequisite: BUS 181 or instructor consent.

Repeatable for credit

3 units

BUS 183. Global Entrepreneurship

Will explore the opportunities that entrepreneurs create, encounter and change in the global and cross-cultural arena. It will examine how entrepreneurs adapt to and succeed in a global economy and how institutional networks facilitate global and immigrant entrepreneurship.

Prerequisite: BUS 181.

Repeatable for credit

3 units

BUS 184. Business Strategy in Practice in Technology Enterprise

See ENGR 184.

3 units

BUS 186. Professional and Business Ethics

See PHIL 186.

GE: S

3 units

BUS 187. Global Dimensions of Business

An integrative interdisciplinary foundation for more specialized courses and self-directed learning. Provides an overview of economic, social, cultural and political/legal forces and factors influencing crossborder business and an introduction to international dimensions of business functions and operations.

3 units

BUS 188. Business Systems and Policy

Provides system perspective on organizations, using information as an integrating vehicle. Examines how information systems can serve business functions and integrate value chain activities.

Prerequisite: COMM 100W or ENGL 100WB or LLD 100WB.

Pre/Corequisite: Fundamental courses.

3 units

BUS 188L. Team Skills Workshop

A laboratory experience emphasizing experimental learning by working on a comprehensive project in Bus 188. Provides guided insights and techniques to enhance team learning and performance, with a focus on developing skills that transfer to other team projects.

Corequisite: BUS 188.

Credit / No Credit

1 unit

BUS 189. Strategic Management

Integrative capstone seminar analyzing interrelationships of managerial decisions/actions within and between the firm and its environment. Applies multi-disciplinary techniques to diagnose and recommend actions appropriate to specific company situations, using case method.

Prerequisite: COMM 100W or ENGL 100WB or LLD 100WB. Restricted to graduating seniors only.

3 units

BUS 190. Quantitative Business Analysis

Quantitative models and computer software used in business decision-making. Studies of network and transportation models, linear programming, CPM/PERT project analysis, decision analysis, simulation and other techniques used in management science applications.

Prerequisite: MATH 70; BUS 90 (or equivalent); BUS 91L (or equivalent).

3 units

BUS 191. Decision Making Under Uncertainty

Decision analysis models and methods for optimizing decision policies: Bayes' Theorem, decision trees, influence diagrams, utility functions and certainty equivalence functions for risk-averse analyses, measures of the value of information, use of relevant spreadsheet computer tools.

Prerequisite: BUS 90.

Note: Offered only occasionally.

3 units

BUS 193. Accounting Concepts for Engineers

Introduces the accounting process and the creation and analysis of financial statements (balance sheet, income statement, statement of retained earnings, statement of cash flows) information for decision making. Includes case versus accrual accounting with a focus on corporate business and annual reports.

Prerequisite: Upper division standing.

3 units

BUS 194. Business Organization and Management of Technology Enterprise

See ENGR 194.

3 units

BUS 198. Strategic Consulting for Small Business

An integrative course requiring student work in a consulting arrangement with a local small business. Field study involves working within an integrated strategic framework to guide original data collection/analysis/recommendations encompassing external and internal considerations.

Prerequisite: Senior standing.

3 units

GRADUATE**BUS 200. Business, Economics and Society**

Emphasizes the relationship between the micro and macro economic environment and thoughtful managerial decision-making. Examines various theories and techniques that underlie the market economy. Costs and benefits of various governmental policies are investigated in a historical context.

Prerequisite: Graduate standing.

3 units

BUS 200W. Managerial Communications

Using a case approach, students will learn about communication within the business world, with the intention that they will practice interpersonal, team, and presentation skills that are expected of effective managers.

Prerequisite: Graduate standing and restricted to Business - MBA majors only
3 units

BUS 202. Managing in the Global Economy

This course investigates the world economy, including how markets, institutions and organizations vary from country to country, and how global competition, climate change, digital and emerging economics, and shifting from manufacturing to a service economy affect management practice.

Prerequisite: Graduate standing and restricted to Business - MBA majors only
3 units

BUS 210. Developing and Managing People

Based on the philosophy that increased self-awareness and effective self-management leads to more effective management of others, uses experientially focused, integrating models, principles, and activities.

Prerequisite: Graduate standing and restricted to Business - MBA majors only
3 units

BUS 220. Accounting Principles

Introduces students to financial and managerial use of accounting information systems and concepts, including the sources, uses and limitations of accounting information as used by investors outside the firm and by managers within the firm.

Prerequisite: Graduate standing and restricted to Business - MBA majors only
3 units

BUS 220A. Core Concepts in Accounting

Provides the conceptual foundation for understanding financial reporting and the usefulness of financial statement output for decision-making. Emphasis on accounting concepts and communication of financial information, with procedural techniques to understand the accounting process.

Prerequisite: MSA classified standing.
3 units

BUS 220B. Financial Reporting and Analysis I

Continuation of Financial Accounting I. Students are exposed to further analysis of financial statements. The focus is on equities: liability recognition and related expenses and stockholders equity. Communication skills developed through extensive use of case studies requiring oral and written responses.

Prerequisite: MSA classified standing.
3 units

BUS 220C. Accounting Information Systems I

Will provide conceptual framework concerning contemporary accounting information systems including: database concepts, internal control, use of systems technology, applications, management, systems analysis/design and auditing.

Prerequisite: MSA classified standing.
3 units

BUS 220D. Financial Analysis and Markets

Provides an overview of the required skills and the environment appropriate to the financial and economic decision-making function of the firm. The integrated approach of this course is designed to identify and analytically evaluate those internal and external variables which contribute to economic and financial decisions. Strategies of financial management in practical settings, application of concepts and analytical tools.

Prerequisite: MSA classified standing.
3 units

BUS 220E. Financial Reporting and Analysis II

Provides entry-level knowledge and skills in business combinations, consolidations, foreign transactions and operations, interim reporting, SEC reporting, troubled debt restructuring and bankruptcy reorganizations, segment reporting, partnerships, governmental accounting and accounting for nonprofit organizations.

Prerequisite: MSA classified standing.
3 units

BUS 220F. Management Accounting and Control Systems

Provides the student techniques with an overview of the concepts and procedures of cost accounting relevant to managerial decision-making. Emphasizes planning and control, inventory valuation and income determination, and performance measurement.

Prerequisite: MSA classified standing.
3 units

BUS 220G. Tax Factors of Business and Investment Decisions: Theory and Practice

An introductory course with focus on concepts relating to the definition and federal taxation of: individuals; gross income, including inclusions and exclusions; deduction; credits; property transactions including capital, non-capital and non-taxable exchanges; and accounting methods.

Prerequisite: MSA classified standing.
3 units

BUS 220H. Auditing: Concepts/Practice

Discusses the public accounting profession and its socio-economic role; auditing techniques with an emphasis on EDP environment; audit procedures, practice and programs; working paper preparation; unqualified and qualified report writing.

Prerequisite: MSA classified standing.
3 units

BUS 220I. Forensic Accounting

Course will examine the frauds perpetrated on companies and methods of discovery. The criminal justice system will be reviewed and litigation support services provided by accountants to attorneys, including damage computations and testifying techniques and skills will be covered.

3 units

BUS 220J. Professional Communications and Relationships I

Emphasizes communication effectiveness and skill building for influencing and guiding people. Includes fundamental skill building in researching, organizing and writing reports, making persuasive presentations that are sensitive to the needs and requirements of clients, peers and managers.

Prerequisite: MSA classified standing.
3 units

BUS 220K. Accounting Practicum

The Accounting Practicum is an internship with an accounting firm or corporate finance group. This provides opportunities to apply program content to real-world environments, gain appreciation of work expectations and demands, and relate field experience to remaining program curriculum.

Perequisite: MSA classified standing.
Credit / No Credit
6 units

BUS 220L. Legal and Ethical Environment of Accounting Practice

Emphasizes knowledge in the areas of the Law of Contracts and selected portions of the Uniform Commercial Code: Sales of Goods; Commercial Paper and other Negotiable Instruments; and Secured Transactions.

Perequisite: MSA classified standing.
3 units

BUS 220N. Organizational Behavior and Strategy

Develops general management perspectives using strategy for competitive positioning and to guide organizational structuring. Within this context, the management of organizational behavior builds skills for leadership, motivation, power and shaping organizational culture. Extensive use of policy cases and behavioral exercises.

Perequisite: MSA classified standing.
3 units

BUS 220P. Taxation of Individuals and Flow-Through Entities

Introduces the essentials of research methodology, taxation of corporations and shareholders, partners and partnerships, and practice and procedure. The student upon completing this course should have the ability to analyze a fact situation, determine the potential problems presented, interpret the law and recommend a feasible solution.

Perequisite: MSA classified standing.
3 units

BUS 220S. Financial Reporting and Analysis III

Accounting for multi-unit operations: consolidated reporting issues, transfer pricing issues, globalization issues (foreign tax structures, organizational forms and international accounting), translation of foreign currency transactions and operations, hedging foreign currency exposures, goodwill and brief exposure to business combinations.

Perequisite: MSA classified standing.
3 units

BUS 220T. Accounting Information/Tax

Builds project-oriented AIS skills in evaluation of performance/internal controls of accounting systems. Development of prototype accounting systems using computer tools. Deepens knowledge of property transactions, sales and use taxes, tax practice, tax penalties and tax procedures.

Perequisite: MSA classified standing.
6 units

BUS 220U. Issues in E-Commerce

Hands-on, project-oriented computer lab to develop working knowledge and skills in using Microsoft EXCEL and ACCESS as application development tools. Students design a prototype accounting system and a generalized audit module prototype assessing integrity of previously designed databases.

Perequisite: MSA classified standing.
3 units

BUS 220V. Professional Communications Relationships II

Communication and relationship skills for professional life throughout career growth and development; development of presentation skills; learn to articulate strengths and understanding key attributes of successful candidates.

Perequisite: MSA classified standing.
3 units

BUS 220X. Business Analysis and Valuation Using Financial Statements

Development of Accounting based valuation framework that integrates a firm's strategy, accounting performance, and value; assessing a firm's value proposition and identifying key value drivers and risks; evaluating degree to which a firm's accounting policies capture the underlying business reality.

Perequisite: MSA classified standing.
3 units

BUS 220Y. Professional Communications and Relationships III

Skill development in converting critique into meaningful and important information to improve professional performance; integration of professional skills; personal style with effective communication skills to prepare the student for transition to professional in the further development of their careers.

Perequisite: MSA classified standing.
3 units

BUS 221. Taxation of Business and Investment Decision-Making

Principles of federal income tax law as applied to business entities, including choice of entities, new ventures, tax deferred transactions such as installment sales, real estate exchanges, and reorgs; AMT; and personal tax planning, including stock options and capital gains.

Perequisite: Graduate standing.
3 units

BUS 222. Profit Planning and Control

Course covers how financial planning and control systems operate, and are used to deploy strategy, align interests, improve operations, and facilitate strategic change, maximizing firm value. Includes disciplined processes of decision-making, resource allocation, performance measurement to link strategy, management action, and shareholder accountability.

Perequisite: BUS 220 and graduate standing.
3 units

BUS 223A. Tax Research and Decision Making

Develops basics for tax research and evaluates the interrelationships of statutes, regulations, rulings and court cases. Identifies tax services and other primary research materials with emphasis on their use in tax decision-making. Emphasizing critical thinking and communication skills.

Perequisite: Graduate standing.
3 units

BUS 223B. Taxation of Partnerships

Income tax treatment of partners and partnerships and LLCs, including the creation, operation, liquidation and sale or other amalgamation of organizations. Special allocation and non-recourse debt arrangements are also covered.

Perequisite: BUS 223A and graduate standing.
3 units

BUS 223C. Taxation of Corporations and Shareholders

Income tax treatment of transactions involving creation of the corporate entity. Operations, including AMT and ACE, liquidations and stock redemptions, tax treatment of both corporations and shareholders, taxation of dividends and other distributions. Taxation of personal holding companies, and accumulated profits.

Prerequisite: BUS 223A and graduate standing.

3 units

BUS 223D. Seminar in Tax Planning and Practice

Capstone course for the MS in Taxation degree. Will integrate financial planning throughout the program, including sale of the business and estate planning, and will include a final written comprehensive project.

Prerequisite: Graduate standing and completion of at least 3 tax core courses.

Completion of the course or BUS 223E satisfies the MST comprehensive project requirement.

3 units

BUS 223E. Business and Tax Aspects of High Technology Companies

Tax in business issues facing high technology companies, including stock options, R&D, package design, fiscal and public policy issues, multi-stage financing, joint venturing, Sections 482, 197, 382, going public, etc. Includes comprehensive project.

Prerequisite: Graduate standing and completion of at least 3 tax core courses.

Completion of this course or Bus 223D satisfies the MST comprehensive project requirement.

3 units

BUS 223F. Tax Accounting Methods/Periods

Definition and importance of accounting methods and periods, timing rules for income and expenditures, change procedures, special accounting methods for inventory, R&D, and long-term contracts.

Prerequisite: BUS 223A and graduate standing.

3 units

BUS 224. Financial Statement Analysis

Course develops the ability to understand, interpret, and analyze financial information, and examines the relationship between financial statement information and the capital markets. Students develop financial analysis skills, and expand perspectives of business and professional roles.

Prerequisite: BUS 220 and graduate standing.

3 units

BUS 225A. Taxation of Estates and Trusts

Excise and transfer tax treatment of estates, gifts, trusts, creators, beneficiaries and fiduciaries. Distinguishes between revocable and irrevocable trusts, including proper trusts to achieve desired goals. Reviews taxation of asset sales and dissolution or liquidation of estates or trusts. Analyzes estate evaluation, family limited partnerships, grants, GST, and planning opportunities.

Prerequisite: Graduate standing.

3 units

BUS 225B. Taxation of Corporate Reorganizations

Income tax treatment of corporate reorganizations and amalgamations, including acquisitions, tax-free and taxable as well as corporate division. Tax treatment of net operating losses, earnings and profits, property basis and other corporate attributes.

Prerequisite: Graduate standing.

3 units

BUS 225C. International Tax – US Corporations with Foreign Activities

Taxation of outbound investment and activities of the US corporations. Topics include sourcing, foreign tax credit, subpart F, Sections 482 and 367, income tax treaties, foreign currency, establishing foreign operations, and issues affecting expanding US multinational technology firms.

Prerequisite: BUS 223A, BUS 223C.

3 units

BUS 225D. International Tax – Individuals and Foreign Corporations

Taxation of individuals with foreign activities, and inbound investment and activities of foreign corporations. Topics include taxation of US expatriates and foreign nationals, foreign tax credit, tax treaties, foreign-owned US real estate, and issues of mobile employees.

Prerequisite: BUS 223A, BUS 223C.

3 units

BUS 225F. State and Local Income Taxation

Topics include: application of interstate income allocations; multi-state tax compact; separate versus apportionment concepts; foreign country source rules; unitary tax.

Prerequisite: Graduate standing.

3 units

BUS 225G. Taxation of S Corporations

Topics include: Income tax treatment of S Corporations and their shareholders, built-in gains tax and excess net passive income tax; operating and distribution rules, shareholders basis, NOL pass-through rules; formation, reorganizations, QSUBS, and state income tax consequences.

Prerequisite: Graduate standing.

3 units

BUS 225H. Taxation of Property Transactions

Tax aspects of property transactions: real estate, intangibles, tangible property. Other topics include Corn Products, Arkansas Best, Arrowsmith court doctrines, passive activity losses, like kind exchanges and involuntary conversions, patents, and franchises, etc.

Prerequisite: Graduate standing.

3 units

BUS 225I. Tax Practices, Penalties and Procedures

Topics include federal and California aspects of preparer/valuation penalty provisions, 30-day and 90-day letter issues, power of attorney, professional ethics, malpractice and criminal penalties and provisions.

Prerequisite: Graduate standing.

3 units

BUS 225J. Taxation of Executive Compensation

Tax aspects of executive compensation includes qualified and nonqualified stock options, deferred compensation, fringe benefits, 401(K), 403(B), pension and profit sharing plans, rabbi trusts, etc.

Prerequisite: Graduate standing.

3 units

BUS 225K. Advanced Individual Taxes

Course includes interest tracing, passive activity losses, net operating losses, divorce, AMT's impact on individuals and individual California income taxes.

Prerequisite: Graduate standing.

3 units

BUS 225L. Accounting for Income Taxes

Interplay of income taxes and financial accounting, deferred income taxes under FAS 109, with both regular tax and AMT reflected; permanent investment overseas, stock options, FAS 123, R&D and software accounting.

Prerequisite: Graduate standing.

3 units

BUS 225M. State and Local E-Commerce, Sales, Use and Property Taxes

Students will develop an understanding of the structure and application of California sales and use taxes; procedural rules for audits, appeals, and claims; property tax rules and changes of ownership or real property.

Prerequisite: Graduate standing.

3 units

BUS 225N. Going Public +/- 1 Year

Business, legal, and tax aspects of preparing a company to go public and subsequent events; including switching S to C, 382, 162(m), options, players in the process, SEC rules and filing requirements.

Prerequisite: Graduate standing.

3 units

BUS 225O. Taxation of Tax Exempt Organizations

Taxation of tax exempt organizations, including application of UBIT; investment in partnerships and S Corp., foundation, pension plans, VEBAS, form 990's.

Prerequisite: Graduate standing.

3 units

BUS 225P. Advanced International Tax – US Corporations

Advanced study of income tax treatment of international corporate transactions including international reorganizations and Section 367, Section 304 and corporate inversions. Planning for intangibles, subpart F planning, foreign entity structuring including use of check-the-box entities, foreign currency transactions, and foreign tax credit planning.

Prerequisite: BUS225C

3 units

BUS 226. Tax and Financial Reporting Issues of Emerging Firms

Management team and business plan issues; public offerings stock issues, certified audit issues, investment banking concerns, SEC requirements, mezzanine financing, purging the S corporation's earnings; reporting requirements, insider trading, restricted stock issues, 10Q, K's and forecasts; tax issues.

Prerequisite: BUS 220 and graduate standing.

3 units

BUS 230. Marketing Management

Fundamental concepts and skills required for understanding markets and managing marketing efforts. Includes market orientation, consumer and industrial buyer behavior, market segmentation, target market identification, product development, pricing, distribution channels, marketing communication, strategy development, and marketing planning and control.

Prerequisite: Graduate standing and restricted to Business - MBA majors only

3 units

BUS 231. Consumer and Market Behavior

Influence of consumer behavior upon marketing management strategy; examination of behavioral concepts as they relate to purchase decisions; types of consumer research instructions and applications; focus on buyer behavior in action-oriented environments.

Prerequisite: Bus 230 and graduate standing.
3 units

BUS 231A. Market Forecasting

Course will help business people in understanding and identifying the appropriate forecasting methods in order to make a more accurate prediction of future demand.

Prerequisite: BUS 230, Business statistics and graduate standing.
3 units

BUS 231C. High Tech Marketing

Course will give students exposure to marketing in technology industries. Principal ideas from the technology adoption life cycle form the conceptual basis for the course. Differences between technology marketing and other kinds of marketing are explored and special skills identified.

Prerequisite: BUS 230, business statistics, and graduate standing.
3 units

BUS 232. Third World Marketing Manager

Marketing in Third World high risk areas: Russian, African, Islamic. Understanding methods of marketing, as well as how to deal with specific third world risks: mafia, bribery, "black" market, smuggling and corruption.

Prerequisite: BUS 230 and graduate standing.
3 units

BUS 233. Business to Business Marketing

Course deals with business-to-business marketing, that is, the marketing of goods, services, and ideas to business and non-retail institutions. Covers product, price, promotion and distribution with emphasis on strategy development and marketing decision-making.

Prerequisite: Bus 230 and graduate standing.
3 units

BUS 233B. Relationship Marketing: Pacific Rim

Course focuses on how to launch a PacRim "start-up". Topics include PacRim forms of product-launch, sales presentation, negotiation, product adaptation, promotion, PacRim risks. Special section on how to launch your overseas career.

Prerequisite: BUS 230 and graduate standing.
3 units

BUS 233E. Marketing to Eastern/Western Europe

Course reviews the region's geography, histories, cultures, religions and those aspects of European lifestyle that directly facilitate our commercial efforts or marketing and doing business in Eastern and Western Europe.

Prerequisite: BUS 230 and graduate standing.
3 units

BUS 234B. Promotional Strategy

Explores the media and techniques used by businesses to communicate with consumers, resellers, and the public. Topics will include budgeting; choosing media; testing communication effectiveness; executing and controlling advertising; personal selling, and consumer trade promotions.

Prerequisite: BUS 230 and graduate standing.
3 units

BUS 236. Current Topics in Marketing

Emphasizes marketing and decision-making in social, government and business environments. Uses behavioral science and quantitative techniques to develop strategies for tactical and strategic marketing solutions to problems which impact on R&D, finance, logistics, manufacturing, distribution and others.

Prerequisite: BUS 230 and graduate standing.
Repeatable for credit
3 units

BUS 238. International Marketing

The development of international marketing strategy. Focus on the evaluation of the various environmental variables, selection of target markets, methods of entry, developing an appropriate marketing mix and planning/control of the international marketing effort.

Prerequisite: BUS 230 and graduate standing.
3 units

BUS 240. Electronic Commerce

Focuses on organizational uses of information technology, impacts of IT on organizational operations and strategies, and increasing importance of Internet in business activities. Covers fundamentals of IT, organizational applications of IT and Internet, and successfully developing and implementing IT-based applications.

Prerequisite: Graduate standing.
3 units

BUS 241. Structured Methods of Information Technology

An analysis of structured methodologies of programming, documentation, testing, and management. Examined in terms of various information technologies; emphasis on development of techniques to analyze, design and adapt system solutions to organizational information needs.

Prerequisite: Graduate standing.
3 units

BUS 242. Distributed Information Systems

An analysis of database management systems, data communications, and telecommunications in a distributed information network. Focus will concentrate on identifying the means through which an organization can use the information technologies of distributed systems to satisfy its data needs.

Prerequisite: Graduate standing.
3 units

BUS 243. Database Management

Introduction to database approach of planning, design and implementation of information systems applications in organizations from the viewpoint of the manager as a knowledgeable user. Includes data modeling, data integrity and practical project assignments.

Prerequisite: Graduate standing.
3 units

BUS 244. Seminar in Organizational Communication

See COMM 244.

3 units

BUS 250. Law and Ethics

Course focuses on both law and ethics in the business environment, how individuals and organizations approach law and ethics, as well as the ethical, legal and social consequences of disregarding law and ethics in favor of other objectives.

Prerequisite: Graduate standing and restricted to Business - MBA majors only
3 units

BUS 251. Personnel and Labor Relations

Technical treatment of personnel management principles, including forecasting of staffing needs, job analysis, recruitment and selection, equal employment opportunity, training and development, performance appraisal, compensation, occupational safety, labor and employment law, collective bargaining, multinational personnel management.

Prerequisite: Graduate standing.
3 units

BUS 252. Managing Organizational Change

The focus will be upon applied organizational change by covering organizational behavior from a normative, policy-oriented perspective. The perspective will be one of viewing the person (student) as an actual or potential change agent; a consultant (internal or external), innovative personnel specialist, or middle or top level manager.

Prerequisite: Graduate standing.
3 units

BUS 253. Conflict Management and Negotiation

Introduces a theoretical framework and skill-building exercises/simulations for negotiating agreements in adversarial or competitive relationships. Explores conflict resolution methods applicable to commercial transactions, employee relations, union management negotiation and contract disputes, as well as international diplomacy.

Prerequisite: Graduate standing.
3 units

BUS 254. Advanced Personnel Management

Selected human resource management topics are studied, including: computer applications and quantitative methods, forecasting, job analysis, personnel recruitment and selection, training and development, EEO, compensation, performance appraisal, OSHA requirements, labor relations.

Prerequisite: BUS 251 (or equivalent); statistics and computer applications; graduate standing.
Repeatable for credit
3 units

BUS 255. Diversity in the Workforce

Analysis of communication, leadership, motivation, group dynamics, decision-making, problem solving, training, change, conflict resolution and other behavioral concerns as they apply to the management of the multicultural workforce.

Prerequisite: Graduate standing.
3 units

BUS 256. Labor and Employment Law

Providing exposure to laws and regulations that govern the employment relationship, this course develops the critical thinking and research skills needed to recognize and effectively manage workplace legal issues such as discrimination, harassment or wrongful discharge.

3 units

BUS 257. Creativity in Managers

Enhancing ability to manage one's self and construct organizational processes and environments that help move individuals from mechanicalness to creativity.

Prerequisite: Graduate standing.
3 units

BUS 258. Leading Edge Managers

Experiential seminar to develop specific managing and leading capabilities. Focus on skills typically missing from MBA education: managing a multi- and cross-cultural workforce; developing effective teams and collaborative work; building a high- performing work system.

Prerequisite: Graduate standing.
3 units

BUS 259. Pacific Rim Technology Management

Addresses regional conditions existing outside the individual firm that affect R&D management. Using case studies of postwar R&D patterns on both sides of Pacific to construct management strategy models appropriate for technologically dynamic international environments.

Prerequisite: Graduate standing.
3 units

BUS 260. Managerial Decision Analysis

Concerns the inherent complexities in the process of choice. Covers decomposition of the decision environment, the use of decision trees, value theory, analysis of criterion, the statistical measurement of risk and uncertainty, preposterior analysis, and problems of collective choice.

Prerequisite: Business statistics and graduate standing; restricted to Business - MBA majors only
3 units

BUS 261. Legal Challenges for the International Manager

Learn how legal systems affect international business. Topics include: securities law in international transactions; US trade law; export regulations; foreign legal problems; legal risk analysis; labor law systems; control of capital and currency; intellectual property rights; licensing; business with state-controlled agencies.

Prerequisite: Graduate standing.
3 units

BUS 262. Leadership

Explores classic and contemporary models of leaders and leadership and defines the difference between management and leadership. Practical applications of theory emphasizing the contingency perspective.

Prerequisite: Graduate standing.
3 units

BUS 263. High Performance Management

An intense analysis of management with main focus on understanding organizations as systems. Use of academic theories as tools with which you solve real-world tactical performance problems. Emphasizes critical thinking and problem solving.

Prerequisite: Graduate standing.
3 units

BUS 264. Introduction to Technology Planning and Management

Develops technology strategies through a qualitative (scenario and strategy map-based) and a quantitative (decision analysis and option theory-based) approach for technology portfolio planning and management. It provides practical, stimulating, and easy-to-use methods for realistic applications.

Prerequisite: Graduate standing.
3 units

BUS 264A. Professional/Business Ethics

Ethical principles relevant to decision-making in business situations. Using case studies, examines and analyzes moral issues to determine the most appropriate actions. Experiential and self-reflective as well as theoretical.

Prerequisite: Graduate standing.
3 units

BUS 267. Alternative Compensation Systems

A systematic exposure to theories and practices of various organizational reward systems. Drawing on managerial, behavioral, and economic frameworks to review various compensation topics and tackle some of the most controversial or innovative issues in compensation management.

Prerequisite: Graduate standing.
3 units

BUS 268. Managing Across Cultures

A comprehensive foundation for understanding, managing, and successfully interacting in the multi-faceted, culturally-embedded contexts of multinational firms. Understanding major issues facing multinational corporations in the management of international operations; insights into cultural, historical and institutional factors; skills for working effectively in international multicultural teams.

Prerequisite: Graduate standing.
3 units

BUS 268A. Global Business Management

A global view on business, investigating why and how companies succeed internationally. It provides students a conceptual tool by which to understand how economic, social and political factors influence both domestic and international operations.

Prerequisite: Graduate standing.
3 units

BUS 269. Strategic Management in the Computer Industry

The online course focuses on the industry-specific strategic challenges faced by companies that comprise the sector that is preeminent in the Information Age. Case studies favor PCs over big Iron and software over hardware.

Prerequisite: Graduate standing.
3 units

BUS 270. Financial Management

Introduces the structure, markets and regulatory factors within the financial system. Develops basic skills in preparing financial plans/budgets, valuing capital costs, financial assets and evaluating the firm's capital structure, cost of capital, working capital, dividend policies, financing and investment decisions.

Prerequisite: BUS 220 and graduate standing; restricted to Business - MBA majors only
3 units

BUS 271. Capital Markets

Driven by technological change, deregulation and globalization, course provides students an overview of the U.S. and international financial environment through financial media, spreadsheets and the Internet. Students leave the class with knowledge of interest rates, flow of funds, derivatives, money and capital markets and financial intermediaries.

Prerequisite: BUS 270 and graduate standing.
3 units

BUS 272. Current Topics in Finance

Presented as a collection of topics of current interest and concern to managers, investors and creditors. A seminar approach emphasizes discussion, illustrations, examples and applications drawn from current financial practice to encourage exploration of all facets of select financial issues.

Prerequisite: BUS 270 and graduate standing.
Repeatable for credit
3 units

BUS 274. Financial Analysis of Technology-Based Firms

Students will learn to develop financial strategies in practical settings. This includes the ability to construct and interpret pro forma financial statements, planning and control models, working capital analysis, capital structure studies, capital budgeting and cost of capital models, and valuation analysis.

Prerequisite: BUS 270 and graduate standing.
3 units

BUS 275. Corporate Finance: Cases in High Tech Firms

Course is a continuation of corporate finance where finance concepts directly related to high technology firms are examined. The concepts are enhanced by using five Harvard cases. Other data and handouts are provided to supplement these cases and the textbook.

Prerequisite: BUS 270 and graduate standing.
Repeatable for credit
3 units

BUS 276. New Venture Finance

New ventures face different business and financing environments than large, publicly-traded firms. The risk of R&D failure is more severe for new ventures. Examines how business and financing decisions are intertwined. Topics: Venture capital, joint ventures and intrapreneurship.

Prerequisite: BUS 270 and graduate standing.
3 units

BUS 277. Investment Analysis and Management

Principles of financial and portfolio analysis applied to investments in common stocks and bonds. Descriptive characteristics of financial markets reviewed, with main emphasis on application of financial theory and statistics to understanding movements in security prices and portfolio values. A financial management viewpoint will be taken in conducting fundamental valuation analysis and formulating portfolio policy.

Prerequisite: BUS 270 and graduate standing.
3 units

BUS 278. International Corporate Finance

The finance manager's responsibilities, risks, problems and need for strategic planning. Unique aspects of financial analysis for international business discussed and applied to real and/or similar decision situations.

Prerequisite: BUS 270 and graduate standing.
3 units

BUS 280. Operations and Supply Chain Management

Analysis of effective and efficient flow of materials, products, services, and information within and across organizations. Includes: process flow analysis, capacity planning, quality, lean supply chain, layout, aggregate planning, supply chain networks, inventory management, sourcing, ERP, and logistics planning.

Prerequisite: Graduate standing and restricted to Business - MBA majors only
3 units

BUS 281. Management of High Technology Organizations

Investigates ingredients for sustained profitable innovation. Emphasizes management of technological innovation, including: innovation strategies, organization, project selection, project management, managing and integrating functional areas. Analyzes developmental processes which enable small firms to grow and prevent large organizations from stifling innovation.

Prerequisite: Graduate standing.

3 units

BUS 283. Entrepreneurship

Examines the growth and nature of entrepreneurship and the support infrastructure of tasks, people, finances and technology. Emphasizes entrepreneur characteristics sought by venture capitalists and investors, role of the business plan and evolutionary stages of start-up activity.

Prerequisite: Graduate standing.

3 units

BUS 284. Managing Product Development

Views product development as a cross-functional business process. Examines concepts used and management challenges faced in structuring product development activity and in strategically managing a portfolio of product development projects.

Prerequisite: Graduate Standing.

3 units

BUS 285. Total Quality Management

Documents forces which propel quality (competition, Deming, Baldridge, etc.) and impact on planning, benchmarking and competitive analysis. Includes design for manufacturability, design of experiments, Taguchi methods, systems analysis, continuous process development and statistical process control.

Prerequisite: Graduate standing.

3 units

BUS 286. Project Management

Covers both strategic and operational points of view for managing projects. Quantitative methods include project planning, budgeting, selection, scheduling, evaluation and control. Qualitative methods include project organization, staffing and team building.

Prerequisite: Graduate standing.

3 units

BUS 287. Advanced Topics in Global Supply Chain Management

In depth analysis of current issues in global SCM with emphasis on industry best practices from around the globe. Topics may include continuous replenishment, value of information, outsourcing, collaboration, strategic alliances, e-SCM, supply chain risk, performance metrics, SCM simulations.

Prerequisite: Bus 280. Graduate standing.

3 units

BUS 288. Manufacturing Planning, Cost and Control

Methods for analyzing cost/volume/profit relationships, job costing, process costing and activity-based accounting. Creating budgets, standards and performance measurements applied to cost of quality and internal control systems. Develops financial tools for non-financial managers.

Prerequisite: Graduate standing.

3 units

BUS 289. Managing Information and High Technology

Applies convergence among information, technology and strategy to organization and design of information and business systems for competitive advantage. Practical uses of electronic data interchange, expert systems and design and control of database systems to manage high-tech production.

Prerequisite: Graduate standing.

3 units

BUS 290. Strategic Thinking

Integrative focus on managing the total enterprise, including corporate and business-level strategy formation. Applies market and industry analysis, using qualitative and quantitative techniques, to position companies in their competitive environment. Students create a strategic plan for on-going or new organization.

Prerequisite: Completion of BUS 200W, BUS 202, BUS 210, BUS 220, BUS 230, BUS 250, BUS 260, BUS 270, 5 out of 7 electives and graduate standing; restricted to Business - MBA majors only ABC/No Credit

3 units

BUS 291. Global Strategy

This course examines the behavioral, managerial, organizational, and strategic consequences of globalization. Writings on global strategy, including the literature on multinational, transnational, and metanational firms, cases looking at the globalization of new technologies, economic development in a WTO world, and sustainable development or green strategies are covered.

Prerequisite: Graduate standing.

3 units

BUS 294. Management Simulation Competition

Developing analytical and general management decision-making skills as member of a team competing in the regional business schools' management simulation game. Extensive use of computers for simulation and analytical/planning tools.

Prerequisite: Graduate standing or instructor consent.

3 units

BUS 295. Management Consulting Field Experience

Apply management theory and learn consulting skills by carrying out an intensive project. Identify and analyze actual business problems, develop and evaluate alternative solutions and present plan to management.

Prerequisite: Graduate standing and instructor consent.

1-3 units

BUS 297A. Special Topics in Business Administration

Special topics to augment regularly-scheduled electives.

Prerequisite: Graduate standing and prerequisite courses as specified.

Repeatable for credit

1-4 units

BUS 297B. Special Topics in Business Administration

Special topics to augment regularly-scheduled electives.

Prerequisite: Graduate standing and prerequisite courses as specified.

Repeatable for credit

1 unit

BUS 297C. Special Topics in Business Administration

Special topics to augment regularly-scheduled electives.

Prerequisite: Graduate standing and prerequisite courses as specified.

Repeatable for credit

2 units

BUS 297D. Special Topics in Business Administration

Special topics to augment regularly-scheduled electives.

Prerequisite: Graduate standing and prerequisite courses as specified.

Repeatable for credit

3 units

BUS 298. Individual Study Problems

For the student with a specific project in mind, in an area not covered by existing coursework. The student must submit a one-page formal proposal to be accepted by an assigned faculty member and approved by the MBA program director. Number of units received will be based on depth and breadth of project.

Prerequisite: Graduate standing.

Repeatable for credit

Credit / No Credit

1-6 units

BUS 298I. Applied Business Experience Internship

For the student who has identified a specific internship opportunity. The student must submit a one page formal proposal to the Associate Dean of the Lucas Graduate School of Business. An approved advancement to candidacy is required. The proposed internship must provide a quality business experience that reinforces the MBA curriculum as well as lead to meaningful work for the organization and student. A final report is required. The internship qualifies as Curricular Practical Training (CPT) for international students.

Prerequisite: An approved advancement to candidacy.

Repeatable for credit

Credit / No Credit

1 unit

BUS 299. Master's Thesis

Master's Thesis Plan A.

Prerequisite: Approval of the instructor and admission to candidacy.

Credit/No Credit/Report in Progress

1-4 units

TRANSPORTATION MANAGEMENT**GRADUATE****MTM 201. Fundamentals of Transportation Management**

Provides a common core of surface transportation knowledge for further MS/TM courses. Includes discussion of the historic development of transportation economics, policy and culture. Reviews stakeholders whose commitment is necessary to create and sustain a successful transportation entity.

3 units

MTM 202. Accounting, Finance and Business Systems

Introduces financial and managerial uses of accounting information systems and concepts. Includes standard costs, cost-volume-profit relationships, contribution analysis, budgeting, performance measurement, variance analysis, working capital, valuing capital costs and financing investment decisions. Explores use of complex information decision systems.

3 units

MTM 203. Transportation Marketing and Communications Management

Emphasizes positioning services to meet the needs of particular groups/market segments and marketing the system to new users/user groups (including developing the public/private sector relationship). Examines strategies for developing the community relationship with marketing and public relations efforts (and using the media to advantage).

3 units

MTM 214. Transportation Policy and Regulation

Surveys political frameworks of governments as both customer and provider; development of transportation policy with public involvement; and performance measurement with public oversight. Reviews policy impact on intermodal development in seeking to manage public and private objectives and diverse agendas of federal, state and local agencies.

3 units

MTM 215. Transportation System Planning and Development

Examines transportation system development interrelationships with land use, environmental management and urban planning. Includes realities of politics, public administration, regulations and financing alternatives. Extends to construction administration including governmental approvals, specification development, contracting law and regulations and fiscal control.

Prerequisite: MTM 214.

3 units

MTM 217. Leadership and Management of Transportation Organizations

A study of the human resource aspects of managing transportation systems, including labor/management collaboration/negotiation and consultative employee relations programs. Builds skills in leadership and team building within the context of bringing about organizational change in a complex transportation system.

3 units

MTM 221. Introduction to Transportation Technologies

Provides students without technical backgrounds with an overview of various modes, systems and technology, with an intermodal focus. Discusses technology and environmental policy and issues.

3 units

MTM 222. Transportation Data Collection and Analysis

A survey of analytical and quantitative techniques used in transportation systems to determine information needs in a decision situation and assess results. Develops awareness of tools, techniques and methods to enable selection of an appropriate research supplier on a basis beyond reputation alone.

3 units

MTM 226A. Emergency Management Issues for Transportation Professionals

Examines the role of emergency management within transportation agencies and the role of transportation and related resources in community-wide responses to emergencies/disasters. Includes instruction in Standardized Emergency Management Systems (SEMS).

3 units

MTM 226B. Security Issues for Transportation Professionals

Examines contemporary challenges to transportation security. Topics to be covered include: management of infrastructure challenges (such as tunnel, bridge, road and rail vulnerabilities) prevention of and response to theft, work place violence, disruptive terrorism, suicide and placement bombing attacks, and their related protection strategies. Students will learn about federal and state grants for security, as well as regional transportation planning for disaster response planning.

3 units

MTM 236. Contemporary Issues in Transportation Management

Emphasizes the impact of contemporary, political, and popular views on decision-making in transportation, and how collaborative efforts are made within the framework of government and business environments. May include significant content via guest speakers/professionals in transportation industry and government.

Prerequisite: Graduate standing and prerequisite courses as may be specified.

3 units

MTM 283. Research Internship

With approval of the program administrator and the IISTPS Research Director, students may apply for an internship with IISTPS. A research team, consisting of a student cohort group and/or IISTPS research associates, will conduct research related to a specific aspect of surface transportation management.

Credit / No Credit

3 units

MTM 290. Strategic Management in Transportation

Provides a culminating experience through an individual comprehensive project. A variety of external learning experiences (internships, field assignments and mentorships) and in-class discussions and exercises provide a capstone seminar with practice in strategic planning to positively impact market environments in surface transportation.

Prerequisite: Prior completion of 21 MTM units.

3 units

MTM 295. Worldwide Approaches to Transportation

An optional summer international study tour, providing cross-cultural experiences with various surface transportation systems in other countries.

Prerequisite: Prior completion of 15 MTM units or permission of graduate advisor.

3 units

MTM 297. Special Topics in Transportation Management

Special topics to supplement regularly programmed elective course. Topics can include, but are not limited to, special skills development, labor relations, information systems, legal environment, public policy, and urban planning.

Prerequisite: Graduate standing and prerequisite courses as may be specified.

Repeatable for credit

3 units

Chemical and Materials Engineering

College of Engineering

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Wenchiang R. Chung
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Associate Professors

Stacy H. Gleixner
Claire F. Komives
Gregory L. Young

Curricula

- BS, Chemical Engineering
- BS, Materials Engineering
- Minor, Materials Science and Engineering
- MS, Chemical Engineering
- MS, Materials Engineering

The Chemical and Materials Engineering Department is the home of the 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.

Mission Statement

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

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 undergraduate curriculum is accredited by the Accreditation Board for Engineering and Technology (ABET).

The BS Chemical Engineering Program Educational Objectives are designed to produce graduates who will be able to:

- Apply fundamental knowledge of engineering and science to characterize and analyze engineering systems.
- Identify and solve engineering problems.
- Participate effectively in engineering teams, utilizing leadership skills, respect for contributions of other team members and appropriate communication skills.
- Communicate engineering problems and solutions effectively in both oral and written formats.

- Conduct themselves as ethical and responsible professionals as well as articulate the environmental, safety and economic impacts of their work on society.
- Engage in lifelong self-directed learning to maintain and enhance professional skills.
- Achieve success in engineering or other chosen career path, or in graduate studies.

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 undergraduate curriculum is accredited by the Accreditation Board for Engineering and Technology (ABET).

The BS Materials Engineering Program Educational Objectives are designed to produce graduates who will be prepared to:

- Apply fundamentals of materials science and engineering to characterize process, structure, property and performance relationships in materials systems, using appropriate techniques and tools.
- Contribute to process design or materials selection to solve engineering problems.
- Participate effectively in engineering teams, utilizing leadership skills, respect for contributions of other team members and appropriate communication skills.
- Communicate engineering problems and solutions effectively in both oral and written formats.
- Conduct themselves as ethical and responsible professionals as well as articulate the environmental, safety and economic impacts of their work on society.
- Engage in lifelong self-directed learning to maintain and enhance professional skills.
- Achieve success in engineering or other chosen career path, or in graduate studies.

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 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 at www.engr.sjsu.edu/cme.

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

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

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. 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 51 and PHYS 52, or PHYS 72; MATH 31, 32 and MATH 133A, CHEM 1A and CHEM 1B.

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}.

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

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. 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 51 and PHYS 52, or PHYS 72; MATH 31, 32 and MATH 133A, CHEM 1A and CHEM 1B.

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 – Materials Science and Engineering

	Semester Units
General Education Requirements	30
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 25 or MATE 115 (or both) must be included in the Minor. The student, in consultation with a Materials Engineering academic advisor, should select 12 units in either the electronic materials option, the structural materials option or the general materials option. Prerequisites for each course must be met unless student receives instructor permission to waive them.	
Electronic Materials and Processing Option	12
Complete twelve units from: MATE 025, MATE 115, MATE 129, MATE 130, MATE 141, MATE 153, MATE 166, MATE 167	
Structural and Mechanical Materials Option	12
Complete twelve units from: MATE 025, MATE 115, MATE 135, MATE 141, MATE 160, MATE 175, MATE 185, MATE 186, MATE 195	
General Materials Option	12
MATE 025, MATE 115 and 9 additional units from either of the other options	
Total Units Required	12

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 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.

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 Studies and Research website at www.sjsu.edu/gradstudies.

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 units of approved electives; 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; one graduate engineering math course; 12 units of electives; 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.

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.

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 Studies and Research website at www.sjsu.edu/gradstudies.

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); 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

Courses

CHEMICAL ENGINEERING

LOWER DIVISION

CHE 099. Chemical and Materials Engineering Seminar

Cutting-edge topics in Chemical and Materials Engineering. Research presentations and guest speakers.

Repeatable for credit

Credit / No Credit

1 unit

UPPER DIVISION

CHE 109. Heat Transfer in Electronics

Introduction to thermodynamics and heat transfer, including conduction, convection and radiation. An emphasis on applications for electronics; including heat transfer in computer components, heat sinks, liquid and air cooling and heat pipes.

Prerequisite: PHYS 71, MATH 133A and EE 98.

3 units

CHE 115. Industrial Chemical Calculations

Methods of formulation and solution of material and energy balances as applied to chemical processes.

Prerequisite: "C-" or better in PHYS 51 and PHYS 52, or PHYS 71; MATH 32, MATH 133A, CHEM 1A and CHEM 1B.

Corequisite: ENGR 10.

Lecture 2 hours/calculation period 3 hours.

3 units

CHE 131. Air Pollution Meteorology

See METR 131.

Repeatable for credit

3 units

CHE 151. Process Engineering Thermodynamics

Analysis of the ideal and real behavior of gases, liquids and solids from a macroscopic viewpoint; 1st and 2nd Law; phase rule; volumetric properties of fluids; heat effects; solution theory and applications; vapor-liquid and solid-solid equilibrium; chemical reaction equilibria.

Prerequisite: CHE 115 or MATE 115; CHEM 161A (with a grade of "C" or better).

Lecture 3 hours/calculation period 3 hours.

4 units

CHE 158. Kinetics and Reactor Design

Analysis of unsteady chemical processes with emphasis on kinetics of reaction and application of fundamental principles to the design and operation of commercial reactors.

Prerequisite: CHE 115, CHE 151, CHE 160A, CHE 162 and CHE 190 (with an average of "C" or better in the five courses); ENGR 100W.

Lecture 2 hours/calculation period 3 hours.

3 units

CHE 160A. Unit Operations I

Materials transportation, fluid metering, mixing, sedimentation, filtration, heat exchange and evaporation; types of equipment used and numerous practical applications. Introduction to transport theory.

Prerequisite: CHE 115 and CHE 190.

Lecture 3 hours/lab 3 hours.

4 units

CHE 160B. Unit Operations II

Continuation of CHE 160A. Mass transfer operations, diffusion, absorption, extraction, distillation, humidification, membrane separations, drying and crystallization. Field trips to process industries.

Prerequisite: CHE 115, CHE 151, CHE 160A, CHE 162 and CHE 190 (with an average of "C" or better in the five courses); ENGR 100W.

Lecture 3 hours/calculation period 3 hours.

4 units

CHE 161. Process Safety and Engineering Ethics

Topics include principles of chemical process safety, risk assessment, analysis of ethics issues, and the application of the engineering ethical code using case studies.

Prerequisite: CHEM 1B.

Lecture 1 hour.

1 unit

CHE 161L. Undergraduate Chemical Engineering Laboratory

Quantitative study of chemical engineering processes, with emphasis on fluid flow and heat transfer operations. Written and oral reports required.

Prerequisite: CHE 115, CHE 151, CHE 160A, CHE 162 and CHE 190 (with an average of "C" or better in the five courses); ENGR 100W.

Corequisite: CHE 160B and CHE 161.

Lecture 1 hour/lab 3 hours.

1 unit

CHE 162. Engineering Statistics and Analysis

Topics will include error analysis, probability, statistics including hypothesis testing, confidence limits and control variables, design of experiments and statistical process control as they are utilized in the chemical, materials and process engineering industries.

Prerequisite: MATH 133A.

3 units

CHE 162L. Undergraduate Chemical Engineering Laboratory

Chemical engineering principles with an emphasis on traditional and novel applications in focuses such as environmental engineering and biotechnology. Written and oral reports will be required.

Prerequisite: ENGR 100W, CHE 160B and CHE 161L.

Lecture 1 hour/lab 3 hours.

2 units

CHE 165. Plant Design

Technical and economic evaluation of a chemical processing plant, including most aspects of a typical industrial design. Major plant design project report required.

Prerequisite: CHE 158 and CHE 160B; instructor consent.

Lecture 3 hours/lab 3 hours.

4 units

CHE 166. Advanced Thin Film Processes

See MATE 166.

3 units

CHE 174. Hazardous Materials

Review of current methods and procedures for management of hazardous materials and hazardous wastes; analysis of contaminated systems and remedial actions.

Prerequisite: PHYS 51, PHYS 52, or PHYS 71 and CHEM 1A or instructor consent.

3 units

CHE 180. Individual Studies

Individual work on special topics by arrangement.

Repeatable for credit
Credit / No Credit
1-3 units

CHE 185. Chemical Process Dynamics and Control

Dynamic behavior of representative chemical processes. Process control; dynamics of open-loop systems; techniques of closed-loop control.

Prerequisite: CHE 160B.
Lecture 2 hours/lab 3 hours.
3 units

CHE 190. Introduction to Transport Phenomena

Introduction to thermodynamics, fluid mechanics and heat transfer. Basic thermodynamics with first and second laws. Laminar and turbulent flow of incompressible fluids. Boundary layer analysis. Convection and steady state and transient conduction.

Prerequisite: "C-" or better in PHYS 51 and PHYS 52, or PHYS 72; MATH 32, MATH 33 and MATH 133A, CHEM 1A and CHEM 1B; also CE 99.
Lecture 2 hours/lab 3 hours.
3 units

CHE 192. Introduction to Biochemical Engineering

Enzyme kinetics and enzyme reactors, enzyme isolation and purification, cellular regulation and recombinant DNA technology, microbial kinetics and design/operation of fermenters.

Prerequisite: CHEM 112A, or both CHEM 130A and CHEM 130B, or CHEM 135 or CHE 158.
3 units

CHE 193. Microbiological Techniques

See BIOL 193.

1 unit

CHE 194. Biochemical Engineering Lab

Principles, concepts and mechanisms of growth and purification of products from biological systems investigated, with emphasis on scale-up procedures. Recombinant DNA techniques and bioinformatics included.

Pre/Corequisite: CHE 192.
Lecture 2 hour/lab 3 hours.
3 units

CHE 197. Cooperative Education Project

See ENGR 197.

3 units

CHE 199. Special Topics in Chemical and Materials Engineering

Special Topics in Chemical and Materials Engineering. Content varies from semester to semester. Course is repeatable for a total of 6 units.

Prerequisite: Instructor consent.
Repeatable for credit
3 units

GRADUATE**CHE 205. Advanced Heat Transfer**

Fundamentals of conduction, convection and their applications in the chemical industry; application of boundary-layer theory to the convection processes.

Prerequisite: CHE 190 or ME 114.
3 units

CHE 207. Mass Transfer

An advanced study of the principles of mass transfer in the diffusional operations of distillation, absorption, extraction, drying and humidification.

Prerequisite: CHE 160B.
3 units

CHE 210. Fundamentals of Environmental Principles and Calculations

Environmental applications of material and energy balances, reactor theory and kinetics, mass transfer, unit operations and chemical fate.

Prerequisite: CHEM 1A, PHYS 2B and MATH 133A (or equivalents) and instructor consent.
MS credit not available for all students. Consult your department for details.
3 units

CHE 211. Advanced Chemical Engineering Thermodynamics

Quantitative development of fundamental laws of thermodynamics and their application to chemical processes. Equilibria and thermal effects in homogeneous and heterogeneous systems. Studies of behavior of complex mixtures and high pressure phenomena.

Prerequisite: CHE 151 and MATH 133A.
3 units

CHE 212. Chemical Process Evaluation

Design of chemical processes with emphasis on computer-aided calculations.

Prerequisite: CHE 158 and CHE 160B.
3 units

CHE 214. Applied Mathematics in Chemical Engineering

Application of ordinary and partial differential equations in the solution of chemical engineering problems, particularly in the unit operations. Bessel functions, finite difference equations and numerical analysis are included.

Prerequisite: CHE 160B and MATH 133A.
3 units

CHE 218. Reaction Kinetics

Theoretical background of simple homogeneous reactions collision theory and absolute reaction rate theory; mechanisms of complex homogeneous reactions. Mechanisms of reactions catalyzed by solids; diffusion in solid catalyst. Reactor design.

Prerequisite: MATH 133A, CHE 151 and CHE 158.
3 units

CHE 219. Transport Processes

Derivation of general differential equations for transport of heat, mass and momentum; kinetic theory of fluids and its application to transport phenomena based on molecular motion; methods for estimating transport coefficients in fluids.

Prerequisite: CHE 160B.
3 units

CHE 220. Fluid Dynamics

The equations of change and their application; the flow of ideal fluids; boundary-layer theory; turbulence; the flow of non-Newtonian fluids.

Prerequisite: MATH 133A; ME 111 or CHE 190.
3 units

CHE 281. MS Thesis/Project Preparation Seminar

See MATE 281.

Credit / No Credit
1 unit

CHE 293. Applied Bioinformatics for Engineers

Bioinformatics theory and applications including sequence search, proteomics, molecular modeling, and combinatorial chemistry. Students will work in teams and be guided in independent inquiry to solve practical bioinformatics problems.

Prerequisite: Senior or graduate standing in engineering or science.
3 units

CHE 295. Independent Project

Independent Project for Chemical Engineering graduate student.

Prerequisite: Graduate advisor consent.
Repeatable for credit
Credit / No Credit
1-6 units

CHE 297. Special Topics in Chemical Engineering

Special topics to augment regularly-scheduled graduate courses.

Prerequisite: Graduate standing or instructor permission.
Repeatable for credit
1-4 units

CHE 298. Master's Project

Master's project work in Chemical Engineering.

Prerequisite: Admission to candidacy.
Corequisite: CHE 281.
Repeatable for credit
Credit / No Credit
1-2 units

CHE 299. Master's Thesis

Master's thesis work in Chemical Engineering.

Prerequisite: Admission to candidacy.
Corequisite: CHE 281.
Repeatable for credit
Credit/No Credit/Report in Progress
1-3 units

MATERIALS ENGINEERING**LOWER DIVISION****MATE 025. Introduction to Materials**

Atomic and crystal structures; imperfections and atom movement; phase equilibria and transformations; boundaries; heat treatment of metals; mechanical, physical and chemical properties of engineering materials.

Prerequisite: CHEM 1A; PHYS 70 or PHYS 50; MATH 31.
Lecture 2 hours/lab 3 hours.
3 units

MATE 099. Chemical and Materials Engineering Seminar

See CHE 099.

Repeatable for credit
Credit / No Credit
1 unit

UPPER DIVISION

MATE 115. Structure/Properties of Solids

Bonding and crystal structure; the space lattice and unit cell calculations; crystalline anisotropy; point, line and surface defects; phase equilibria and interpretation of phase diagrams; thermal activation and the vacancy mechanism of mass transport in solids.

Prerequisite: PHYS 51 and PHYS 52, or PHYS 71 (with grades of "C-" or better); MATH 32, MATH 133A, CHEM 1A, CHEM 1B and MATE 25.

Corequisite: ENGR 10.

3 units

MATE 129. Introduction to Integrated Circuits Processing and Design

Basic processes involved in fabrication of integrated circuits; semiconductor physics, material preparation, oxidation, diffusion; photolithographic, thin-film deposition and etching. Simple component layout and evaluation of device parameters.

Prerequisite: MATE 25 or MATE 153.

Lecture 2 hours/lab 3 hours.

3 units

MATE 130. Characterization and Analysis of Semiconductor Devices

Fundamental measurements, failure mechanisms and analytical techniques used to characterize semiconductor materials and analyze devices.

Prerequisite: MATE 129.

3 units

MATE 135. Introduction to Composite Materials

Introduction to theory, application, and design with composite materials, including high performance resin-matrix fibrous composites and metal-matrix materials. Topics include materials, test techniques, environmental effects, design considerations, and application requirements.

Prerequisite: MATE 025.

3 units

MATE 141. Structure and Analysis of Materials

Prerequisite: MATE 115.

Corequisite: MATE 153.

3 units

MATE 143. Principles of Scanning Electron Microscopy

Principles and practice of scanning electron microscopy. Basic theory and skills development of electron microscopy, including electron dispersive spectroscopy. Imaging and compositional analysis of conductive and non-conductive samples.

Prerequisite: Introductory course in chemistry, physics or materials engineering.

3 hour lab.

ABC/No Credit

1 unit

MATE 144. X-Ray Diffraction Lab

Practical applications of X-ray diffraction. Including phase identification, texture analysis, grain size determination.

Prerequisite or Corequisite: MATE 141 or instructor consent.

ABC/No Credit

1 unit

MATE 145. Principles of Scanning Probe Microscopy

Principles and practice of various surface probe microscopies including AFM and STM.

Prerequisite: Introductory course in chemistry, physics or materials engineering.

ABC/No Credit

1 unit

MATE 151. Process Engineering Thermodynamics

See CHE 151.

4 units

MATE 152. Solid State Kinetics

Diffusion and rates of reaction in solids.

Transformations in solids, including nucleation and growth, martensitic transformation, spinodal decomposition and order-disorder reactions.

Prerequisite: 2.0 average for MATE 115, MATE 141, MATE 151, MATE 154 and MATE 155; ENGR 100W; CHE 162.

3 units

MATE 153. Electronic, Optical and Magnetic Properties of Materials

Crystalline and energy band structure of materials, thermal properties and electrical conduction in semiconductors and metals, optical and magnetic properties of solids.

Prerequisite: PHYS 71 or PHYS 51; CHEM 1A; EE 98 and MATH 133A.

Lecture 2 hours/lab 3 hours.

3 units

MATE 154. Metals and Alloys

Application of principles of solids to studies of thermal and mechanical processing of metals and alloys. Heat treatments, metallography and interpretation of microstructure.

Prerequisite: MATE 115.

Corequisite: MATE 153 or ENGR 100W.

Lecture 2 hours/lab 3 hours.

3 units

MATE 155. Materials Selection and Process Design

Selection of materials and design of processes to achieve desired structure, properties and performance. Materials manufacturing and process engineering methods, including statistical process control, design of experiments, control charts and yield analysis. Focus is on design and development of processes for improvement of materials.

Prerequisite: MATE 115; CHE 162.

3 units

MATE 160. Fracture Mechanics

Stress; strain; stress-strain relationships; elastic stress distribution; ideal strengths; linear elastic fracture mechanics; plastic yielding; post yield fracture mechanics; fatigue; environment-assisted cracking.

Prerequisite: MATE 195 or CE 112.

3 units

MATE 166. Advanced Thin Film Processes

Science and engineering of thin film deposition processes, etching and patterning processes used in microelectronics fabrication. Design of experiments methodology for examining process variables and process control.

Prerequisite: MATE 129.

Lecture 2 hours/lab 3 hours.

3 units

MATE 167. Microelectronics Manufacturing Methods

See EE 167.

3 units

MATE 169. Microelectromechanical Systems Fabrication and Design

See ME 169.

3 units

MATE 175. Biomaterials

Properties and biocompatibility of metallic, ceramic, polymeric and biological materials used in devices and biotechnology, with emphasis on interventional cardiology, surgical devices implants, vascular prostheses, catheters and drug delivery systems, orthopedics and ophthalmology.

Prerequisite: MATE 25 or instructor consent.

3 units

MATE 180. Individual Studies

Individual work on special topics by arrangement.

Prerequisite: Major form on file with department and instructor consent.

Repeatable for credit

Credit / No Credit

1-3 units

MATE 185. Ceramics

Structure, properties and processing of crystalline and glassy ceramics, including defect thermodynamics, surfaces, ternary phase equilibria, sintering and new applications.

Prerequisite: 2.0 average for MATE 115, MATE 141, MATE 151, MATE 153, MATE 154 and MATE 155; ENGR 100W; CHE 162.

3 units

MATE 186. Polymers

Structure and properties of solid polymers; chemistry; thermal transitions; mechanical, electrical and optical properties; influence of chemical structure and processing on properties; applications.

Prerequisite: MATE 25 (with a grade of "C") and CHEM 161A (or equivalent as determined by instructor).

3 units

MATE 189. Magnetic Materials and Magnetic Recording

Study of properties of ferromagnetic materials. Preparation and properties of ferromagnetic thin films. Principles of digital magnetic recording. Operation of magnetic recording components, including magnetoresistive and spin valve read heads and thin film media.

Prerequisite: PHYS 71, EE 098.

3 units

MATE 191. Materials Processing Laboratory

Lab experience in common processing methods for polymers, ceramics and composite materials. Design and characterization of materials processing methods.

Prerequisite: MATE 25 or TECH 25.

1 unit

MATE 195. Mechanical Behavior of Materials

Elasticity, plasticity, anelasticity; deformation mechanisms; effect of microstructure and imperfections; fatigue; creep, fracture; materials design, selection and applications.

Prerequisite: 2.0 average for MATE 115, MATE 141, MATE 151, MATE 153, MATE 154 and MATE 155; ENGR 100W; CHE 162; CE 99.

Lecture 2 hours/lab 3 hours.

3 units

MATE 197. Cooperative Education Project

See ENGR 197.

3 units

MATE 198A. Senior Design Project

Apply materials engineering principles to the design and implementation of an approved materials engineering project; first semester of a two semester project.

Prerequisite: 2.0 average and "C" minimum grade in (MATE 115, MATE 141, MATE 151, MATE 153, MATE 154, MATE 155); ENGR 100W; CHE 162.

Corequisite: MATE 195 and CHE 161.

Lab/presentation 9 hours.

2 units

MATE 198B. Senior Design Project

Apply materials engineering principles to the design and implementation of an approved materials engineering project; second semester of a two semester project.

Prerequisite: MATE 198A with a minimum grade of "C".

Lab/presentation 9 hours.

2 units

MATE 199. Special Topics in Chemical and Materials Engineering

See CHE 199.

Repeatable for credit

3 units

GRADUATE**MATE 205. Advanced Mechanical Behavior of Solids**

Structure-property relationships in mechanical behavior of materials, including elastic, anelastic and plastic behavior; creep characteristics, fracture, testing methods, dislocation dynamics, strengthening mechanisms.

Prerequisite: MATE 115 (or equivalent).

3 units

MATE 210. Experimental Methods in Materials Engineering

Advanced study of experimental techniques used in materials engineering, including data acquisition and analysis, experiment design strategy and hands-on operation of advanced equipment.

Prerequisite: MATE 115 (or equivalent).

Lecture 2 hour/lab 3 hours.

3 units

MATE 215. Solid State Materials Engineering

Electrical, optical and magnetic properties. Includes wave mechanics, bonding theory, energy band theory, electronic transport, conduction, semiconduction and insulation.

Prerequisite: MATE 115 (or equivalent).

3 units

MATE 220. Principles and Applications of Electrochemistry

Applied electrochemical systems, such as fuel cells, batteries, electrolytic plating, electrosynthesis. Environmental degradation in biological and material systems. Modern electrochemical techniques in analytical chemistry, including polarography, cyclic voltammetry, coulometric and pulse methods.

Prerequisite: MATE 155 (or equivalent) or instructor consent.

3 units

MATE 232. Plasma Processing of Materials

Principles of low temperature plasmas used for materials processing, including plasma fundamentals, plasma chemistry, collision and heating mechanisms and diagnostics. Material interactions in plasma assisted etching, deposition, and surface treatment will be emphasized.

Prerequisite: MATE 133A, MATE 25, and PHYS 51 or equivalent courses.

3 units

MATE 234. Microelectronic Packaging Materials Science

Materials engineering principles, as applied to microelectronic packaging. Topics covered include polymers/ceramics/metals structure-property relationships, phase diagrams, diffusion, bonding, corrosion, materials testing, characterization, materials selection and failure analysis, among others.

Prerequisite: ENGR 240 or instructor consent.

3 units

MATE 236. Fracture Mechanics of Structures

Application of fracture mechanics theory to design and analysis of structural components, both metallic and non-metallic. Effect of materials processing and environmental conditions on fracture.

Prerequisite: CE 112 (or equivalent) and instructor consent.

Lecture 2 hours/lab 3 hours.

3 units

MATE 238. Magnetic Materials and Processing

Paramagnetism and ferromagnetism; anisotropies and magnetic domains; hysteresis in thin metallic films. Application of magnetic materials to magnetic recording, including processing and characterization of magnetic materials.

Prerequisite: Graduate standing, MATE 115 or equivalent.

3 units

MATE 241. Advanced Methods of Materials Characterization

Methods for characterization and analysis of bulk materials, films, nanoscale structures and surfaces.

Prerequisite: Upper division undergraduate course in chemistry, condensed matter physics or materials.

3 units

MATE 251. Advanced Solid State Thermodynamics

Thermodynamics of phase changes, nucleation and growth, martensitic changes, diffusion, rate theory, structural changes accompanying transformation, applications of theoretical concepts to materials development.

Prerequisites: MATE 115 and MATE 151 (or equivalent).

3 units

MATE 260. Theory of Semiconductor Materials

Advanced theory of constitution, structure and energy bands in semiconductors; material requirements of devices; different methods of doping, interconnection, isolation of circuits, material processing and failure analysis.

Prerequisite: MATE 25, MATE 115, MATE 153 or MATE 129 (or equivalent).

3 units

MATE 270. Methods of Thin Film Deposition

Chemical and physical methods of thin film deposition including evaporation, sputtering, chemical vapor deposition, and electroplating. Thermodynamics and kinetics of growth; considerations for reactor design; control of deposition to alter film properties; deposition processes used for metals, dielectrics and semiconductors.

Prerequisite: MATE 152 (or equivalent).

3 units

MATE 281. MS Thesis/Project Preparation Seminar

Development of project or thesis proposal.

Prerequisites: Classified standing, completion of minimum 9 units towards MS degree, candidacy form submitted, satisfactory completion of university graduate writing requirement, and departmental oral examination (MATE only).

Lab 3 hours.

Credit / No Credit

1 unit

MATE 295. Independent Project

Independent Project for Materials Engineering graduate student.

Prerequisite: Graduate advisor consent.

Repeatable for credit

Credit / No Credit

1-6 units

MATE 297. Special Topics in Materials Engineering

Special topics to augment regularly-scheduled graduate courses.

Prerequisite: Graduate standing or instructor permission.

By arrangement only.

Repeatable for credit

1-4 units

MATE 298. Master's Project

Master's project work in Materials Engineering.

Prerequisite: Admission to candidacy

Corequisite: MATE 281.

Repeatable for credit

Credit / No Credit

1-2 units

MATE 299. Master's Thesis

Master's thesis work in Materials Engineering.

Prerequisite: Admission to candidacy.

Corequisite: MATE 281.

Repeatable for credit

Credit/No Credit/Report in Progress

1-3 units

Chemistry

College of Science

Duncan Hall 518
408-924-5000

Professors

Stephen E. Branz
Ludwig A. Mayer
Roy K. Okuda
Joseph J. Pesek
Maureen A. Scharberg
Gerald A. Selter
Herbert B. Silber
Karen A. Singmaster
Pamela C. Stacks
Bradley M. Stone, Chair
Daniel A. Straus

Associate Professors

David Brook
Elaine D. Collins
Marc d'Alarcao
Roger H. Terrill

Assistant Professors

Daryl K. Eggers
Patrick E. Fleming
Resa Kelly
John W. Logan
Gilles Muller

Adjunct Professors

Andrew De Mello
Katy Korsmeyer
Maria Matyska
Charles Wade

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

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, coursework 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 semester 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 coursework (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 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. Biochemistry or Materials Science may be chosen as areas of concentration.

Semester Units

General Education Requirements36
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 Education2
Supporting Courses Required25
MATH 030, MATH 031 and MATH 032 (10); PHYS 070, PHYS 071 and PHYS 072 (12); PHIL 133 (3)	
Requirements in the Major63
Required Core29
CHEM 001A, CHEM 001B and CHEM 055 (14); CHEM 100W, CHEM 112A, CHEM 112B, CHEM 113A, CHEM 113B and CHEM 120S (15)	
Additional Required Courses24
CHEM 130A, CHEM 145, CHEM 145L, CHEM 155, CHEM 161A, CHEM 161B, CHEM 162L and CHEM 178	
Capstone Course3
CHEM 114, CHEM 131B or CHEM 146	
Science Electives7
Approved upper division science electives	
Total Units Required126

**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 Requirements33
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 Education2
Supporting Courses Required37
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 Major54
Required Core29
CHEM 001A, CHEM 001B and CHEM 055 (14); CHEM 100W, CHEM 112A, CHEM 112B, CHEM 113A, CHEM 113B and CHEM 120S (15)	
Biochemistry Concentration25
Required Courses19
CHEM 130A, CHEM 130B, CHEM 130C, CHEM 131A, CHEM 161A and CHEM 161B	
Capstone Course3
CHEM 131B	
Chemistry Electives3
Approved upper division chemistry or biology	
Total Units Required126

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 Requirements36
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 Education2
Supporting Courses Required14
MATH 030, PHYS 002A, PHYS 002B and PHIL 133	
Requirements in the Major52
Required Core33
CHEM 001A, CHEM 001B, CHEM 055, CHEM 100W, CHEM 112A, CHEM 112B, CHEM 113A, CHEM 113B, CHEM 160 and CHEM 120S	
Approved Upper Division Electives19
Students must complete at least three Upper Division lab courses, including at least one capstone course.	
Elective Lab Courses4-6
Complete two courses from: CHEM 131A, CHEM 145L, CHEM 155, CHEM 162L	
Capstone Course3
CHEM 114, CHEM 131B or CHEM 146	
Other Upper Division Electives10-12
Requirements in the Minor16
Selected in consultation with advisor	
Total Units Required120

**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 Requirements33
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 Education2
Supporting Courses Required28
MATH 030, MATH 031, MATH 032 and MATH 133A (13); PHYS 070, PHYS 071 and PHYS 072 (12); PHIL 133 (3)	
Requirements in the Major69
Required Core29
CHEM 001A, CHEM 001B and CHEM 055 (14); CHEM 100W, CHEM 112A, CHEM 112B, CHEM 113A, CHEM 113B and CHEM 120S (15)	
Materials Science Concentration40
Required Courses35
CHEM 130A, CHEM 145, CHEM 155, CHEM 161A, CHEM 161B, CHEM 162L, MATE 025, MATE 115, MATE 129, MATE 141 and MATE 153	
Capstone Course3-4
CHEM 199 (1), MATE 198A (2) or MATE 198B (2)	
Upper Division Courses1-2
Approved upper division electives in materials engineering or chemistry	
Total Units Required132

BA – Chemistry, 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 Chemistry. 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 chemistry 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	33
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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)
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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
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Preparation for the Major and Supporting Courses	30-32
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PHYS 002A and PHYS 002B (8); MATH 030 (3); BIOL 001 and BIOL 002 (8) or BIOL 020 and BIOL 021 (6); GEOL 103 (3); ASTR 101, GEOL 105 or METR 112 (3); SCI 110 (3); SCED 175 (1); PHIL 133 (3)

Requirements in the Major	46
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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)

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

Electives	6
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Approved upper division chemistry electives

Total Units Required	120-122
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Minor – Chemistry

Semester Units

Required Core	11
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CHEM 001A, CHEM 001B and CHEM 120S

Electives	12
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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)

Total Units Required	23
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MS – Chemistry

Advisor: Dr. Joseph Pesek

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.

MA – Chemistry

Advisor: Dr. Joseph Pesek

This degree is designed for persons who seek to augment and enhance their knowledge of chemistry beyond the bachelor's level. It is intended 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.

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 coursework 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 Studies and Research website at www.sjsu.edu/gradstudies. The 30 unit proposed program is written by the Graduate Advisor in consultation with the student and describes completed coursework and coursework planned for the future. This must include a minimum of 18 units of graded coursework. 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**Completing Requirements**

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 coursework.

- 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 114, 118, 121S, 126, 127, 130A, 130B, 130C, 131A, 131B, 135, 145, 146, 155, 159, 173, 178, 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.

MA – Chemistry**Completing the Requirements**

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.

Courses**CHEMISTRY****LOWER DIVISION****CHEM 001A. General Chemistry**

Topics including stoichiometry, reactions, atomic structure, periodicity, bonding, states of matter, energy changes, solutions using organic and inorganic examples. Lab program complements lecture.

Prerequisite: Proficiency in high school chemistry or CHEM 10 (with a grade of "C" or better; "C-" not accepted) or instructor consent; proficiency in high school algebra and eligibility for MATH 19; eligibility for ENGL 1A.

Lecture 3 hours/lecture 1 hour/lab 3 hours.

CAN CHEM A

5 units

CHEM 001B. General Chemistry

Topics including stoichiometry, colligative properties, kinetics, equilibria, thermodynamics and electrochemistry. Lab program complements lecture.

Prerequisite: CHEM 1A (with a grade of "C" or better; "C-" not accepted).

Lecture 3 hours/lab 6 hours.

CAN CHEM B

5 units

CHEM 008. Organic Chemistry

Introduction to the chemistry of carbon compounds for allied health majors and others requiring only 3 units of organic chemistry lecture.

Prerequisite: CHEM 1B (with a grade of "C" or better; "C-" not accepted).

CHEM 8 is not a satisfactory prerequisite for CHEM 112B. No credit toward Chemistry major or minor.
3 units

CHEM 009. Organic Chemistry Lab

Organic chemistry laboratory for allied health majors and others requiring only 1 unit of organic chemistry lab.

Pre/Corequisite: CHEM 8.

Lab 3 hours.

No credit toward Chemistry major or minor.
1 unit

CHEM 010. Chemical Calculations and Concepts

Fundamental concepts in chemistry and problems in chemical symbolism and calculations. For students wishing to continue in chemistry, but lacking prerequisites for CHEM 1A.

Prerequisite: One year high school algebra.

Lecture 2 hours/activity 2 hours.

No credit towards chemistry major or minor.
3 units

CHEM 030A. Introductory Chemistry

The physical world as seen by a chemist; the ways this world affects humans, other animals and plants used as illustrations of fundamental general chemistry.

Lecture 2 hours/lab 3 hours.

No credit toward Chemistry major or minor.
GE: B1+B3
3 units

CHEM 030B. Introductory Chemistry

Organic compounds produced both in nature and artificially and the reactions they undergo, particularly in the human.

Prerequisite: CHEM 30A (with a grade of "C" or better; "C-" not accepted).

Lecture 2 hours/lab 3 hours.

No credit toward Chemistry major or minor.

3 units

CHEM 035. Introduction to Physical Sciences

An introductory physical science course that provides a foundation in physical science and that meets the "Standards of Quality and Effectiveness for the Subject Matter Requirement for the Multiple Subject Teaching Credential (CCTC)." Inquiry-based applications of topics and concepts in physical science that are appropriate for the elementary grade levels will be emphasized. Various everyday examples of chemistry and physics will be used to illustrate relevant principles.

Lecture 2 hours/lab 3 hours.

No credit toward chemistry major or minor.

GE: B1+B3

3 units

CHEM 055. Quantitative Analysis

Introduction to theories and techniques of chemical analysis.

Prerequisite: CHEM 1B (with a grade of "C" or better; "C-" not accepted); eligibility for ENGL 1A.

Lecture 2 hours/lab 6 hours.

A basic algebra, logarithms and chemistry test is given the first class meeting to determine eligibility.

CAN CHEM12

4 units

CHEM 090. Problem Solving for Chemistry

Supplemental course taken simultaneously with lower division chemistry lecture courses. Techniques for studying and problem solving emphasis. Preparation and active participation expected. Consult schedule of classes for current offering(s).

No credit toward chemistry major or minor.

Repeatable for credit

Credit / No Credit

1 unit

UPPER DIVISION**CHEM 100W. Writing Workshop: Chemical Communications**

Improvement of skills in scientific writing and speaking.

Prerequisite: ENGL 1B (with a grade of C or better); Completion of core GE, satisfaction of Writing Skills Test and upper division standing; CHEM 55 or CHEM 112A (with grades of "C" or better; "C-" not accepted).

ABC/No Credit

GE: Z

3 units

CHEM 112A. Organic Chemistry

Chemistry of the carbon compounds, both aliphatic and aromatic, emphasizing underlying concepts.

Prerequisite: CHEM 1B (with a grade of "C" or better; "C-" not accepted).

3 units

CHEM 112B. Organic Chemistry

Continuation of CHEM 112A.

Prerequisite: CHEM 112A (with a grade of "C" or better; "C-" not accepted).

3 units

CHEM 113A. Organic Chemistry Lab

Fundamental techniques for the isolation, characterization and synthesis of organic compounds.

Prerequisite: CHEM 112A (with a grade of "C" or better; "C-" not accepted).

Lab 6 hours.

2 units

CHEM 113B. Organic Chemistry Lab

Continuation of CHEM 113A including more advanced work.

Prerequisite: CHEM 113A (with a grade of "C" or better; "C-" not accepted). Chemistry majors only or instructor consent.

Pre/Corequisite: CHEM 112B.

Lecture 1 hour/lab 6 hours.

3 units

CHEM 114. Advanced Organic Chemistry Lab

A special topics course in laboratory experiments utilizing modern chemical, physical and spectrometric methods.

Prerequisite: CHEM 55, CHEM 100W, CHEM 112B and CHEM 113B (with grades of "C" or better; "C-" not accepted).

Lecture 1 hour/lab 6 hours.

ABC/No Credit

3 units

CHEM 118. Special Topics in Organic Chemistry

Introduction to a wide range of subjects typically missing from the traditional organic chemistry sequence (CHEM 112A and CHEM 112B, CHEM 113A and CHEM 113B). Consult schedule of classes for current offering(s).

Prerequisite: CHEM 112B (with a grade of "C" or better; "C-" not accepted).

Repeatable for credit

1 unit

CHEM 120S. Chemical Safety Seminar

Safety protocol appropriate to working with hazardous chemicals. Physical nature of hazards, biological effects, permissible exposures, safety precaution techniques. OSHA requirements.

Prerequisite: College level chemistry course.

Credit / No Credit

1 unit

CHEM 121S. Radiation Safety

See NUCS 121S.

1-2 units

CHEM 123. Radiation and Biological Systems

See NUCS 123.

2 units

CHEM 126. Introduction to Nuclear Science

Properties of the atomic nucleus. Applications of nuclear science in biology, chemistry, engineering, geology and physics.

Prerequisite: Lower division calculus, chemistry and physics.

3 units

CHEM 127. Nuclear Science Lab

Basic techniques and procedures used in nuclear science. Nuclear decay, nuclear reactions, radiation detection and measurements, nuclear analytical methods and tracer techniques.

Prerequisite: NUCS 121S, CHEM 100W and CHEM 126 (with grades of "C" or better; "C-" not accepted); or instructor consent.

Lecture 1 hour/lab 6 hours.

ABC/No Credit

3 units

CHEM 130A. Biochemistry

Chemistry of amino acids, carbohydrates, lipids and nucleotides. Studies of protein structure and function, protein isolation, enzyme kinetics and enzyme mechanisms.

Prerequisite: CHEM 55 (with grades of "C" or better; "C-" not accepted).

Pre/Corequisite: CHEM 112B.

4 units

CHEM 130B. Biochemistry

Continuation of CHEM 130A. Concepts of bioenergetics; biochemical pathways of degradation and synthesis; metabolic regulation.

Prerequisite: CHEM 112B, CHEM 130A and BIOL 3 (with a grades of "C" or better; "C-" not accepted).

4 units

CHEM 130C. Biochemistry

Advanced biochemical topics selected from the fields of immunology, physiology, molecular and cell biology.

Prerequisite: CHEM 112B, CHEM 130A and BIOL 3 (with a grades of "C" or better; "C-" not accepted).

Pre/Corequisite: CHEM 130B.

3 units

CHEM 131A. Biochemistry Lab

Fundamental qualitative and quantitative techniques and methodology in modern biochemistry.

Prerequisite: CHEM 113A (with a grade of "C" or better; "C-" not accepted).

Pre/Corequisite: CHEM 130A.

Lab 6 hours.

2 units

CHEM 131B. Biochemistry Lab

Continuation of CHEM 131A. Advanced isolation techniques and enzyme methodology.

Prerequisite: CHEM 100W, CHEM 130A, CHEM 131A (with grades of "C" or better; "C-" not accepted).

Pre/Corequisite: CHEM 130B or CHEM 130C.

Lecture 1 hour/lab 6 hours.

ABC/No Credit

3 units

CHEM 132. Introductory Biochemistry

Cellular and nutritional biochemistry for those who do not plan to continue in biochemistry, such as nutritional science and other science majors.

Prerequisite: CHEM 30B or CHEM 8 (with grades of "C" or better; "C-" not accepted).

No credit toward Chemistry major or minor.

4 units

CHEM 132L. Introductory Biochemistry Lab

Lab work associated with chemistry of foods and nutrition, cellular metabolism, biomacromolecules, vitamins and the structure of carbohydrates, lipids, proteins and nucleic acids.

Pre/Corequisite: CHEM 132.

Lab 3 hours.

No credit toward Chemistry major or minor.

1 unit

CHEM 135. General Biochemistry

A survey course on structure/function of biological molecules such as amino acids, proteins including enzymes, lipids/membranes, carbohydrates, and nucleic. Course topics include intermediary metabolism, regulation, and molecular biology.

Prerequisite: BIOL 3 (with a grade of "C" or better; "C-" not accepted).

Pre/Corequisite: CHEM 112B.

4 units

CHEM 137. Medical Biochemistry

Chemistry and pathology of some of the physiological processes of the body, especially those of importance to the medical sciences.

Prerequisite: CHEM 9 or CHEM 112B with a grade of "C" or better.

No credit toward chemistry major or minor.

3 units

CHEM 137L. Medical Biochemistry Lab

Diagnostic biochemistry including typical analysis of body fluids, function tests, and other clinical lab techniques emphasizing instrumentation.

Corequisite: CHEM 137.

Lab 3 hours.

No credit toward chemistry major or minor.

1 unit

CHEM 145. Inorganic Chemistry

Development of unifying principles to understand the chemistry of the elements. An introduction to the chemistry, bonding theories and applications of coordination compounds.

Prerequisite: CHEM 112B and CHEM 160 or CHEM 161A (with grades of "C" or better; "C-" not accepted).

3 units

CHEM 145L. Inorganic Chemistry Laboratory

Principles and practice in the synthesis and characterization of inorganic and organometallic substances.

Prerequisite: CHEM 113A and CHEM 100W (both with a grade of "C" or better; "C-" not accepted).

Pre/Corequisite: CHEM 178 or instructor consent.

Lecture 1 hour/lab 3 hours.

2 units

CHEM 146. Physical-Inorganic Techniques

Application of advanced instrumental and preparative techniques to the study of structure, reactivity and spectroscopy of inorganic and organic substances including materials.

Prerequisite: CHEM 100W, CHEM 145, CHEM 145L, CHEM 155 or CHEM 162L, CHEM 178 (with grades of "C" or better; "C-" not accepted) or instructor consent.

Lecture 1 hour/lab 6 hours.

ABC/No Credit

3 units

CHEM 155. Instrumental Analysis

Principles and practices in the use of instrumental methods in chemical analysis. Basic physical chemistry necessary to understand the operation and limitations of the instruments.

Prerequisite: CHEM 100W and CHEM 160 (with grades of "C" or better, "C-" not accepted).

Lecture 3 hours/lab 3 hours.

4 units

CHEM 159. Advanced Analytical Chemistry

A lecture and problem course which considers advanced topics in chemical analysis. Consult schedule of classes for current offering(s).

Prerequisite: Upper division standing or instructor consent.

A total of 6 units may apply toward degree.

Repeatable for credit

1-2 units

CHEM 160. Physical Chemistry

Introduction to the fundamental principles of physical chemistry. Thermodynamics, kinetics, quantum mechanics and spectroscopy.

Prerequisite: CHEM 55, PHYS 2B and MATH 30 (with grades of "C" or better; "C-" not accepted).

4 units

CHEM 161A. Physical Chemistry

Principles of classical physical chemistry. Chemical thermodynamics, kinetics and electrochemistry.

Prerequisite: CHEM 55 (or CHEM 1B and upper division standing for engineering majors), PHYS 70 (or equivalent) and MATH 32 (with grades of "C" or better; "C-" not accepted).

3 units

CHEM 161B. Physical Chemistry

Principles of modern physical chemistry. Quantum chemistry, spectroscopy and statistical mechanics.

Prerequisite: CHEM 161A and PHYS 72 (with grades of "C" or better; "C-" not accepted).

3 units

CHEM 162L. Physical Chemistry Lab

Physical chemical measurements with data analysis and written reports.

Prerequisite: CHEM 100W or ENGR 100W; CHEM 160 or CHEM 161B or CHEM 161A with concurrent enrollment in CHE 158 (with grades of "C" or better; "C-" not accepted).

Lab 6 hours.

2 units

CHEM 172. Chemistry of Wine

Introduction to chemistry of important components (organic acids, pigments, tannins, flavor constituents, etc.) of grape wine. Chemical changes that occur during fermentation, maturation and aging.

Prerequisite: CHEM 1B (with a grade of "C" or better; "C-" not accepted) or instructor consent.

1 unit

CHEM 173. Polymer Chemistry

Chemistry of polymeric substances, both natural and synthetic, emphasizing polymers of current interest.

Prerequisite: CHEM 112B (with a grade of "C" or better; "C-" not accepted) or instructor consent.

3 units

CHEM 178. Chemistry and the Computer

Analysis of chemical problems. Spreadsheets, mathematical software packages, computer programming, computational chemistry methods.

Prerequisite: CHEM 55 and MATH 30 or MATH 30P (with a grade of "C" or better; "C-" not accepted).

Lecture 2 hours/activity 2 hours.

3 units

CHEM 180. Individual Studies

Advanced supervised lab work. Work and results described in written and oral reports as required by instructor. An honors course.

Prerequisite: CHEM 120S, instructor consent and "B" average.

Repeatable for credit

Credit / No Credit

1-4 units

CHEM 184. Directed Reading

Assigned readings of selected books, journals and papers to fill gaps in training or for contact with new fields. Regular conferences with instructor. Written report required. An honors course.

Prerequisite: Instructor consent and CHEM 55.

Repeatable for credit

Credit / No Credit

1-3 units

CHEM 190. Advanced Problem Solving for Chemistry

Supplemental course taken simultaneously with upper division chemistry lecture courses. Techniques for studying and problem solving emphasis. Preparation and active participation expected. Consult schedule of classes for current offering(s).

No credit toward chemistry major or minor.

Repeatable for credit

Credit / No Credit

1 unit

CHEM 191. Undergraduate Seminar

Problem solving and presentation of topics within specialized sub-areas of chemistry by students, faculty and guests. A total of 2 units may be repeated.

Prerequisite: CHEM 1B.

Repeatable for credit

Credit / No Credit

0.5 units

CHEM 199. Senior Thesis or Project

Prerequisite: Minimum of 2 units of CHEM 180 or

CHEM 184, instructor consent and CHEM 100W.

Credit / No Credit

1 unit

GRADUATE**CHEM 201. Graduate Studies in Chemistry**

Principles and topics in contemporary chemical research. Mandatory for chemistry graduates during their first fall semester of enrollment in the M.S. or M.A. program. Open to senior undergraduates with instructor consent.

Repeatable for credit

Credit / No Credit

1 unit

CHEM 203. Methods of Instruction in Chemistry

A seminar and discussion course to introduce effective methods for teaching undergraduate chemistry laboratories. Management issues such as record-keeping, grading and classroom administration will be covered. This course is highly recommended for those graduate students who plan to teach. Open to senior undergraduates with instructor consent.

Credit / No Credit

1 unit

CHEM 205. Methods of Chemical Research

Concepts and techniques used in chemical research. Topics include theory of experimental design, analog and digital electronics, optical and mechanical design of scientific instruments.

Prerequisite: CHEM 155, CHEM 161B and CHEM 162L (or equivalents with grades of "C" or better; "C-" not accepted).

Lecture 2 hours/lab 3 hours.

Alternate years.

3 units

CHEM 210. Advanced Organic Chemistry

Structures and mechanisms in organic chemistry.

Pre/Corequisite: CHEM 112B and CHEM 161A (or equivalents with grades of "C" or better; "C-" not accepted).

Alternate years.

3 units

CHEM 212. Natural Products

Topics from the structure proof, synthesis and biosynthesis of secondary metabolites.

Prerequisite: CHEM 114 (or equivalent with a grade of "C" or better; "C-" not accepted) or other advanced organic course.

Alternate years.

3 units

CHEM 213. Organic Synthesis

Synthetic methods and their application to multistep organic syntheses. Emphasis will be placed on synthetic strategy and a mechanistic understanding of synthetic reactions.

Prerequisite: CHEM 112B (or equivalent with a grade of "C" or better; "C-" not accepted). Alternate years

3 units

CHEM 214. Heterocyclic Compounds

A course devoted to the organic chemistry of the ring compounds of oxygen, nitrogen and sulfur.

Prerequisite: CHEM 112B (or equivalent with a grade of "C" or better; "C-" not accepted).

Alternate years.

3 units

CHEM 216. Physical Organic Chemistry

Application of molecular orbital theory to organic chemistry and related topics.

Prerequisite: CHEM 112B and CHEM 161B (or equivalents with grades of "C" or better; "C-" not accepted).

Alternate years.

3 units

CHEM 218. Organotransition Metal Chemistry

Structure and reaction chemistry of compounds which contain transition metal-carbon bonds.

Applications to catalytic processes and to organic synthesis.

Prerequisite: CHEM 112B and CHEM 145 (or equivalents with grades of "C" or better; "C-" not accepted) or instructor consent.

Alternate years.

3 units

CHEM 227L. Synthesis with Radioisotopes

Basic techniques of handling, synthesizing and assaying labeled compounds.

Prerequisite: CHEM 112B (or equivalent); CHEM 120S, CHEM 121S and CHEM 127 (with grades of "C" or better; "C-" not accepted).

Lab 6 hours.

Alternate years.

2 units

CHEM 231. Advanced Biochemistry

Chemistry of the amino acids, peptides and proteins, the chemistry of enzyme action and introduction to the metabolism of amino acids and related compounds.

Prerequisite: CHEM 130B or CHEM 135 (or equivalent with a grade of "C" or better; "C-" not accepted).

Alternate years.

3 units

CHEM 232. Nucleic Acids

Topics include structural features of DNA and RNA, protein-DNA or RNA interactions, chemical and enzymatic basis for gene expression, and recombinant DNA methods.

Prerequisite: CHEM 130C or CHEM 135 (or equivalent with a grade of "C" or better; "C-" not accepted).

Alternate years.

3 units

CHEM 233. Immunochemistry

Topics include antibody-antigen reaction theory in solution, gels and solid phase; function and structure at both protein and gene level of immunoglobulins and other immunochemicals. Papers from immunochemical literature critiqued.

Prerequisite: CHEM 130A or CHEM 135 (or equivalent with a grade of "C" or better; "C-" not accepted) or instructor consent.

Alternate years.

3 units

CHEM 234. Enzymology

Enzyme structure, function, classification, isolation and methodology, mechanisms, theory of catalysis, enzyme kinetics, pH effects, allosterism and regulation.

Prerequisite: CHEM 130B or CHEM 135 (or equivalent with a grade of "C" or better; "C-" not accepted).

Alternate years.

3 units

CHEM 235. Biochemical Separation Methods

Theory and methodology of biochemical separations. Topics selected from adsorption, bioaffinity, gas, gel, hydrophobic, ion-exchange and partition chromatography as well as electromigration methods and centrifugation.

Prerequisite: CHEM 130B or CHEM 135 (or equivalent with a grade of "C" or better; "C-" not accepted).

Alternate years.

3 units

CHEM 236. Biophysical Methods

Advanced lectures on theory and methodology of biophysical measurements. Topics selected from spectroscopic, electromigration and hydrodynamic methods. Practice, limitations and data reduction procedures for each method examined.

Prerequisite: CHEM 130A or CHEM 135 (or equivalent with a grade of "C" or better; "C-" not accepted) or instructor consent.

Alternate years.

3 units

CHEM 237. Bioinorganic Chemistry

Provides an in-depth survey of the frontiers of bioinorganic chemistry from both biochemical and synthetic inorganic chemistry perspectives.

Prerequisite: CHEM 130A (or equivalent with a grade of "C" or better; "C-" not accepted) or instructor consent.

Alternate years.

3 units

CHEM 245. Advanced Inorganic Chemistry

Advanced topics of current interest in inorganic chemistry.

Prerequisite: CHEM 145 (or equivalent with grade of "C" or better; "C-" not accepted).

Alternate years.

Repeatable for credit

3 units

CHEM 250. Current Topics in Analytical Chemistry

Lecture, discussion and reading assignments on special topics in analytical chemistry. Topics vary each semester. Course may be repeated for credit for different topics.

Prerequisite: CHEM 155 (or equivalent with a grade of "C" or better; "C-" not accepted).

Repeatable for credit

3 units

CHEM 258. Advanced Analytical Chemistry – Chemometrics

Introduction to chemometric methods in analytical chemistry. Development and discussion of advanced numerical methods and simplex analysis in the design and refinement of experimental techniques in analytical chemistry.

Prerequisite: Satisfactory background in upper division chemistry, physics or engineering, or instructor consent.

Alternate years.

3 units

CHEM 259. Advanced Analytical Chemistry – Electrochemistry

Modern electrochemical techniques in analytical chemistry. Introduction to contemporary instrumental methods including polarography, cyclic voltammetry, coulometric and pulse methods and spectro-electrochemistry.

Prerequisite: Satisfactory background in upper division chemistry, physics, mathematics or engineering or instructor consent.

Alternate years.

3 units

CHEM 261. Chemical and Statistical Thermodynamics

Development of classical and statistical thermodynamic principles. Applications to problems of chemical interest, including non-equilibrium processes.

Prerequisite: CHEM 161B (or equivalent with a grade of "C" or better; "C-" not accepted) or instructor consent.

Alternate years.

3 units

CHEM 262. Chemical Kinetics

Chemical kinetics and reaction mechanisms of gaseous and liquid systems.

Prerequisite: CHEM 161B (or equivalent with a grade of "C" or better; "C-" not accepted) or instructor consent.

Alternate years.

3 units

CHEM 263. Quantum Chemistry

Development of the principles of quantum mechanics, the application of quantum mechanical calculations to the electronic structure of polyatomic molecules, the nature of chemical bonding and recent developments in the structure of matter.

Prerequisite: CHEM 161B, MATH 32 and MATH 133A (or equivalents with grades of "C" or better; "C-" not accepted).

Alternate years.

3 units

CHEM 264. Chemical Applications of Group Theory

The application of group theoretical principles to problems in quantum chemistry, molecular structure, spectroscopy and ligand field theory.

Prerequisite: CHEM 161B (or equivalent with grade of "C" or better; "C-" not accepted) or instructor consent.

Alternate years.

3 units

CHEM 265. Molecular Spectroscopy

Interaction of non-ionizing radiation with matter. Development of the foundations of modern molecular spectroscopy. Determination of detailed molecular structure through spectroscopic information.

Prerequisite: CHEM 161B (or equivalent with grade of "C" or better; "C-" not accepted).

Alternate years.

3 units

CHEM 268. Laser Spectroscopy

See PHYS 268.

3 units

CHEM 270. Advanced Chemistry

Lectures, discussions and reading assignments in special fields of chemistry. Topics vary. Course may be repeatable for maximum of 10 units.

Prerequisite: Satisfactory background in upper division chemistry and instructor consent.

Repeatable for credit

1-5 units

CHEM 270L. Advanced Chemistry Laboratory

Advanced laboratory assignments in special fields of chemistry. Topics vary. Maximum of 4 units may be repeatable.

Prerequisite: Satisfactory background in upper division chemistry, CHEM 120S and instructor consent.

Repeatable for credit

1-3 units

CHEM 272. Addition Polymerization

The synthesis and mechanisms of chain growth polymerizations. Introduction to copolymerization, coordination polymerization and emulsion polymerization.

Prerequisite: Satisfactory background in upper division chemistry or materials science or instructor consent.

Alternate years.

3 units

CHEM 273. Condensation Polymerization

Step growth polymerizations. Stoichiometric, kinetic and statistical approaches to linear polymerization and gelation. Introduction to interfacial polymerization, copolymerization and ring opening polymerization.

Prerequisite: Satisfactory background in upper division chemistry or materials science or instructor consent.

Alternate years.

2 units

CHEM 276. Physical Polymer Chemistry

Techniques for characterizing molecular weights of polymers, their distribution functions, polymer chain statistics and solution thermodynamics.

Prerequisite: Satisfactory background in upper division chemistry or materials science or instructor consent.

Alternate years.

3 units

CHEM 277. Analytical Polymer Chemistry

Modern analytical methods used to identify and characterize polymeric materials, such as DSC, TGA, TMA, DMA, chromatographic techniques, solid state NMR, FT-IR, introductory surface analysis techniques and x-ray diffraction methods.

Prerequisite: Satisfactory background in upper division chemistry or materials science or instructor consent.

Alternate years.

3 units

CHEM 285. Seminar

Presentation of chemical topics by graduate students, faculty and guests. A maximum of 2 units may be repeated.

Repeatable for credit

0.5 units

CHEM 291A. Divisional Seminar

Problem solving and presentation of topics within specialized sub-areas of chemistry by graduate students, faculty and guests (291A, organic; 291B, biochemistry; 291C, analytical-inorganic; 291D, physical; 291E, nuclear-radiochemistry). A maximum of 1 unit may be repeated.

Repeatable for credit
Credit / No Credit
0.5 units

CHEM 291B. Divisional Seminar

Problem solving and presentation of topics within specialized sub-areas of chemistry by graduate students, faculty and guests (291A, organic; 291B, biochemistry; 291C, analytical-inorganic; 291D, physical; 291E, nuclear-radiochemistry). Maximum of 1 unit may be repeated.

Repeatable for credit
Credit / No Credit
0.5 units

CHEM 291C. Divisional Seminar

Problem solving and presentation of topics within specialized sub-areas of chemistry by graduate students, faculty and guests (291A, organic; 291B, biochemistry; 291C, analytical-inorganic; 291D, physical; 291E, nuclear-radiochemistry). Maximum of 1 unit may be repeated.

Repeatable for credit
Credit / No Credit
0.5 units

CHEM 291D. Divisional Seminar

Problem solving and presentation of topics within specialized sub-areas of chemistry by graduate students, faculty and guests (291A, organic; 291B, biochemistry; 291C, analytical-inorganic; 291D, physical; 291E, nuclear-radiochemistry). Maximum of 1 unit may be repeated.

Repeatable for credit
Credit / No Credit
0.5 units

CHEM 291E. Divisional Seminar

Problem solving and presentation of topics within specialized sub-areas of chemistry by graduate students, faculty and guests (291A, organic; 291B, biochemistry; 291C, analytical-inorganic; 291D, physical; 291E, nuclear-radiochemistry). Maximum of 1 unit may be repeated.

Repeatable for credit
Credit / No Credit
0.5 units

CHEM 297. MA Special Study

Supervised individual MA project. Maximum of 12 unit may be repeated.

Pre/corequisite: CHEM 201 and instructor consent.
Repeatable for credit
Credit / No Credit
1-3 units

CHEM 298. Research

Supervised individual laboratory work or directed chemical field studies for the student with adequate preparation. Maximum of 12 unit may be repeated.

Pre/Corequisite: CHEM 120S, CHEM 201 and instructor consent.
Repeatable for credit
Credit / No Credit
1-6 units

CHEM 299. Master's Thesis

Prerequisite: CHEM 298, instructor consent and admission to candidacy for the master's degree.
Maximum of 6 unit may be repeated.
1-2 units per semester.
Repeatable for credit
Credit/No Credit/Report in Progress
1-6 units

Child and Adolescent Development

College of Education

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childdev@email.sjsu.edu
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Professors

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Kathryn J. Lindholm-Leary
Amy A. Strage

Associate Professors

Robin L. Love
Mary McVey
Maureen C. Smith

Assistant Professors

Ravisha Mathur
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

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;
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/programs/.

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 in the Major 51

Lower Division Core 9

CHAD 060, CHAD 067 and PSYC 001

Upper Division Core 27

CHAD 160, CHAD 161, CHAD 168, CHAD 169, CHAD 170 and CHAD 195 (18); CHAD 162 or CHAD 164 (3); CHAD 163 (3); CHAD 100W or LLD 100W (3)

Interdisciplinary Requirements 15

Psychology: PSYC 117 or PSYC 142 (3); JS 120, JS 136, SCWK 192 or SCWK 195 (3). 6

Sociology: NUFS 114B, POLS 130 or SOCS 177 (3) 3

Mathematics: GE Math Concepts (3); CHAD 101, SOCI 015 or STAT 095 (3) 3

Electives or Minor 28

Courses selected with advisor approval from interdisciplinary requirements in the major or the preparation for teaching requirements. Recommended: CHAD 101, CHAD 150 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. *Note that courses listed below as "Requirements for Multiple Subjects Preparation Core Curriculum" are designed for students who begin their college careers in this major. Students who are transfers or who are changing into this major, in consultation with a department advisor, identify the coursework appropriate for the individual. In addition, this program is approved by the California Commission on Teacher Credentialing (CTC) 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 Requirements6
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 Education2
Requirements in the Major45

Lower Division Requirements9
CHAD 060, CHAD 067 and PSYC 001

Upper Division Core24
CHAD 100W or LLD 100W (3); CHAD 162 or CHAD 164 (3); CHAD 159, CHAD 163, CHAD 168, CHAD 169, CHAD 170 and CHAD 195 (18)

Interdisciplinary Requirements12
PSYC 117 or PSYC 142 (3); JS 120, JS 136, SCWK 192 or SCWK 195 (3); NUFFS 114B, POLS 130 or SOCI 177 (3); CHAD 101, SOCS 015 or STAT 095 (3)

Requirements for Multiple Subjects Preparation Core Curriculum66
See paragraph one above.

Electives1

Total Units Required120

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 Courses10
CHAD 060, EDSE 104 and EDSE 108

Electives6
Complete two courses from: CHAD 161, CHAD 164, CHAD 168, EDSE 101, EDSE 102

Total Units Required16

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 166, CHAD 167, CHAD 168, CHAD 169, CHAD 170 (9)15

Total Units Required15

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 coursework 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

- An application for admission to the university and an application for admission to the Child 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 deadlines generally are November 30 for admission to the spring semester and 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

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

Courses

CHILD AND ADOLESCENT DEVELOPMENT

LOWER DIVISION

CHAD 015. Human Life Span

See HS 015.

GE: D1
3 units

CHAD 060. Child Development

The child in the family and community from prenatal life throughout the adolescent years. Observation required.

GE: E
3 units

CHAD 067. Development of Human Potential

Examines the interaction of psychosocial, cognitive, psychomotor, and physical attributes as related to the development and realization of human potential across the lifespan in a contemporary multicultural society.

Not open to KIN majors and minors for major/minor credit.
GE: E
3 units

UPPER DIVISION

CHAD 100W. Writing Workshop

Development of advanced skills in writing, particularly in the field of child development. Focus on development of a mature writing style and organization of persuasive and analytical prose.

Prerequisite: ENGL 1B (with a grade of C or better); Completion of core GE, satisfaction of Writing Skills Test and upper division standing.

ABC/No Credit
GE: Z
3 units

CHAD 101. Research Methods in Child Development

Study of various techniques and methods used in child development research. Development of proposal writing skills.

Prerequisite: CHAD 60.
3 units

CHAD 102. Development of Self in a Culturally Diverse Society

Examines the influence of various institutions and society on the psychosocial development of children and adolescents from culturally diverse backgrounds in the United States.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

Lecture and field observations.

GE: S
3 units

CHAD 106. Concepts of Childhood

Explores the historical diversity in the ways in which childhood has been defined; investigates diverse cultural definitions of childhood; examines the impacts of those beliefs and definitions on human development.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: V
3 units

CHAD 116. Aging and Nutrition

See NUFS 116.

3 units

CHAD 120. Social Studies Methods Through Literacy

Methods to facilitate social studies pedagogy in the elementary classroom with particular attention to content area literacy, the integration of curricular strands, and the needs of diverse student populations.

Prerequisite: Program admission. Acceptance into the CHAD Integrated Degree/Credential Program.
3 units

CHAD 121. Meeting the Needs of Diverse Children and Families in Schools

Course prepares professional educators for meeting the needs of diverse students and their families in schools as it examines legal issues, effective instructional strategies and adaptations, measurement, assessment, and family involvement.

Prerequisite: Acceptance into the CHAD Integrated Degree/Credential Program.
3 units

CHAD 122. Teaching and Learning in the Classroom

Course provides an essential grounding in theories of learning and motivation; classroom management; foundations of measurement and assessment; and effective instructional strategies, while including training in electronic portfolios and reflective practice.

Prerequisite: Program admission.
3 units

CHAD 123. Children and Youth in Contemporary Schools

Historical and contemporary school/society relationships which shape American educational institutions and practices. Focus on the influences of philosophical, social, political, demographic, economic, and public health trends on the delivery of educational programs.

Prerequisite: Program admission.
3 units

CHAD 124. Reading/Language Arts/Technology Methods

Methods to facilitate language and literacy development in culturally and linguistically diverse K-8 classrooms. Use of technology and integration of curricular strands explored. Systematic instruction in methods as outlined in California Reading Initiative of 1996.

Prerequisite: Program admission.
6 units

CHAD 125. Science/Mathematics Methods

Methods to create and implement interdisciplinary curricula to strengthen the teaching/learning process while maintaining the integrity and rigor of the individual disciplines. Study of science, mathematics, and associated pedagogy.

Prerequisite: Program admission.
6 units

CHAD 126. Student Teaching

Supervised teaching in a public school classroom at two grade levels. Practicum in the field and seminar on campus. Meets requirement for student teaching.

Prerequisite: Certificate of Clearance.
Repeatable for credit
Credit / No Credit
12 units

CHAD 149. Child Health and Physical Activity

An integrative approach to understanding the multiple factors that impact children's health and physical fitness and that influence the development of lifelong habits. Emphasis is on the inter-relationships between health and fitness and cognitive, social, and emotional well-being.

Prerequisite: Upper division standing.
3 units

CHAD 150. Development of Communicative Competence

Survey of major topics in the development of communicative competence (theoretical approaches to understanding language acquisition, contexts for development, language diversity, relationship between language and cognition). Attention given to language acquisition, media influences and language assessment.

Prerequisite: CD 60.
3 units

CHAD 151. Developing Literacy in a Diverse Society

Knowledge of a balanced literacy approach, including an understanding and use of the major descriptors of developing literacy, appropriate assessment methods and instruments, and a developmental and analytical appreciation for writing strategies, conventions, and applications.

Prerequisite: Upper division standing.
3 units

CHAD 159. Child Development K-8 Practicum

Principles, techniques, observation and participation in the guidance of elementary and middle school children.

Prerequisite: CD 60 or equivalent.
Lecture 1 hours/lab 6 hours.
3 units

CHAD 160. Child Development Practicum

Principles, techniques, observation and participation in the guidance of children.

Prerequisite: CHAD 60 (or equivalent).
Lecture 1 hour/activity 4 hours.
3 units

CHAD 161. Child Care Administration II

Survey of practices and procedures integral to designing, operating, and assessing high quality care programs for young children. Focus is on parent and staff development, curriculum design, and hands-on activities designed to develop administrative skills.

Prerequisite: CHAD 60 (or equivalent).
3 units

CHAD 162. Childhood and Adolescence in a Multicultural Society

Exploration of the agents and processes by which cultural values and social attitudes are transmitted. Interactions of individuals from four groups in the U.S. examined from culturally monolithic and pluralistic perspectives.

Prerequisite: Upper division standing.
3 units

CHAD 163. Critical Issues in Adolescent Development

Relationships among major socialization agents (family, peers, school, media). Ethnicity, primary language and socioeconomic status as they affect adolescents.

Prerequisite: CHAD 60 or instructor consent.
3 units

CHAD 164. Contemporary Parenting

Philosophies and theories of parent-child relationships in a multicultural society.

Prerequisite: Upper division standing.
3 units

CHAD 166. Preschool Theory and Philosophy

Historical development, theory and philosophy of preschool education. Experience in community programs for young children.

Pre/Corequisite: CHAD 60.
Lecture 2 hours /activity 3 hours.
3 units

CHAD 167. Child Care Administration I

Policies, regulations, and licensing requirements related to administering and supervising child care facilities.

Prerequisite: Upper division standing.
Lecture/activity 7 hours.
3 units

CHAD 168. Social and Emotional Development in Childhood and Adolescence

Understanding issues in social and emotional development and processes of development underlying the emergence of self, social behavior, and emotional competence. Study coping and models of resiliency as related to familial and extrafamilial contexts of social and emotional development.

Prerequisite: CHAD 60 and PSYC 1 (or equivalent).
Repeatable for credit
3 units

CHAD 169. Motivating Children and Adolescents in Educational Settings

Perspectives of psychoanalysis, individual psychology, behaviorism and cognitive psychology as applied to the motivation of children and adolescents in educational settings.

Prerequisite: PSYC 1 (or equivalent).
3 units

CHAD 170. Contextual Influences on Cognitive Development

Survey of major topics and issues in cognitive development and the acquisition of communication skills. The influence of family, school and cultural environment on these developmental changes.

Prerequisite: PSYC 1 and CHAD 60 (or equivalent).
3 units

CHAD 180. Individual Studies

Individual work on special topics by arrangement.

Prerequisite: Program director consent.
Repeatable for credit
Credit / No Credit
1-4 units

CHAD 195. Senior Seminar in Child Development

Advanced study of recent and seminal research and writing in the area of child and adolescent development.

Prerequisite: CHAD major, 12 units completed in CHAD, senior standing, and completion of CHAD or LLD 100W with a passing grade.
3 units

CHAD 199. Senior Honors Thesis

Supervised thesis. Enrollment limited to qualified senior child and Adolescent development majors.

Prerequisite: Senior or graduate standing and instructor consent.
Repeatable for credit
Credit / No Credit
1-3 units

GRADUATE**CHAD 260A. Seminar in Child and Adolescent Development: Research**

Advanced study of recent child and adolescent development research. Examination of quantitative and qualitative research methodologies used in the field.

Prerequisite: Graduate standing; 12 units in CHAD or related disciplines; CHAD 101 (or equivalent); CHAD majors.
3 units

CHAD 260B. Seminar in Child and Adolescent Development

Capstone course with advanced study of recent research and writings in the area of child and adolescent development. Course includes completion of the cumulative experience project.

Prerequisite: Graduate standing; 9 units in CHAD MA core courses, co-registration in CHAD 298; CHAD majors.
3 units

CHAD 262. Multicultural Issues in Child and Adolescent Development

Examination of factors influencing the psychosocial development of children and adolescents in a multicultural society. Theoretical and methodological issues affecting the understanding of diversity in child development are also explored.

Prerequisite: 9 units in CHAD or related disciplines.
3 units

CHAD 266. Social Policy Issues in American Childhood and Youth

Survey of issues in child and adolescent development which are the topics of national debate in the United States. Research background and social policy implications of these topics are addressed.

Prerequisite: 9 units in CHAD or related disciplines.
3 units

CHAD 268. Seminar in Social and Emotional Development

Examination of current issues in childhood and adolescent social and emotional development: processes underlying self-esteem and self-control and emergence of the self. Contributions of family, school and society are considered.

Prerequisite: 9 units in CHAD or related disciplines.
3 units

CHAD 270. Seminar in Cognitive and Language Development

Examination of major topics in cognitive and language development: stages of development, nature/nurture controversy, stability of behavior over time. Individual differences in cognition and cognitive styles are also explored.

Prerequisite: 9 units in CHAD or related disciplines.
3 units

CHAD 298. Special Studies in Child and Adolescent Development

Supervised study in the field of child development.

Prerequisite: Admission to candidacy for the master's degree.
Repeatable for credit
Credit / No Credit
3-6 units

CHAD 299. Master's Thesis

Supervised thesis in the field of child development.

Prerequisite: Admission to candidacy for the master's degree.
Repeatable for credit
Credit/No Credit/Report in Progress
3-6 units

Civil and Environmental Engineering

College of Engineering

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Kurt McMullin

Assistant Professors

Jae-Ho Pyeon

Curricula

- BS, Civil Engineering
- MS, Civil Engineering

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.

In support of the mission, the Department has developed the following educational objectives:

- Carry out entry-level civil engineering practice
- Continue graduate studies in civil engineering
- Apply their acquired engineering knowledge to solve practical problems
- Develop solutions that account for economic, environmental, ethical and societal considerations
- Incorporate ethical and professional standards in making their decisions
- Communicate effectively
- Continue life-long learning

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 undergraduate curriculum is accredited by the Accreditation Board for Engineering and Technology (ABET).

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.

BS – Civil 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
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); MATH 129A (3) (*)	
Required for the Major	74
Engineering Common Area	24
CE 099, CE 112, CE 113, EE 098 and ENGR 010; CE 020; MATE 025, ME 101 and ME 111	
Required Courses in Engineering	38
CE 008, CE 105, CE 120, CE 121, CE 130, CE 131, CE 140, CE 150, CE 160, CE 162, CE 170, CE 190, CE 192 and ENGR 100W	
Additional Courses	12
Four professionally integrated courses from civil engineering electives approved by advisor	

Total Units Required 135-138

*Note that CHEM 001B may be taken in place of MATH 129A although it is a 5 unit class

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

Students must complete the following courses with a "C-" or better: CE 99, CE 112, CE 121, CE 140, CE 150, CE 160, CE 170.

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 coursework 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 Studies and Research website at www.sjsu.edu/gradstudies.

Completing Requirements

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.

Courses**CIVIL ENGINEERING****LOWER DIVISION****CE 008. Plane Surveying**

Theory and practice of engineering measurements. Techniques and instruments used establishing horizontal and vertical control. Topographic methods.

Prerequisite: Trigonometry.

Lecture 2 hours/lab 3 hours.

CAN ENGR10

3 units

CE 020. Engineering Graphics, CAD and Programming

Develop visualization skills by using technical sketching, AutoCAD and manual drafting to solve civil engineering graphical problems. Subjects include: isometric sketching, orthographic projection, descriptive geometry, and plan reading. Writing Visual Basic computer programming code and logic flow.

Lecture 2 hours/lab 3 hours.

3 units

CE 099. Statics

Study of bodies in equilibrium. Applications to particles, two-dimensional and three-dimensional structural systems. Topics include free body diagrams, centroids, shear and moment diagrams, distributed loads, moments of inertia and friction.

Prerequisite: ENGR 10, MATH 31; PHYS 70 (or equivalent).

Grade of "C-" or better required for CE majors.

CAN ENGR 8

2 units

UPPER DIVISION**CE 105. Professional Design I**

Planning, design, construction, maintenance and operation of civil engineering projects. Conducted as an internship program under supervision of a professional engineer.

Prerequisite: CE 140, CE 150, CE 160.

Credit / No Credit

1 unit

CE 112. Mechanics of Materials

Stress distributions, strain, stresses and deformations in machines and structures subject to axial, bending and torsional loads, including combined loads. Stability of columns.

Prerequisite: CE 99.

Corequisite: MATE 25 and MATH 133A.

Grade of "C-" or better required for CE majors.

3 units

CE 113. Mechanics of Materials Laboratory

Experimental stress analysis. Verification of theoretical models through testing. Deflection of beams, inelastic bending and column instability.

Prerequisite: CE 112.

1 unit

CE 120. Construction Materials Laboratory

Properties, testing and design of civil engineering construction materials, including aggregates for concrete and bituminous mixes. Theory and design of bituminous and portland cement-aggregate mixes.

Prerequisite: Junior standing.

Corequisite: CE 112.

Lab 3 hours.

1 unit

CE 121. Transportation Engineering

Principles, theories, practices in transportation engineering design; planning surveys and data analysis; traffic flow characteristics; location and geometric design of systems to include highways, rail, airports, waterways and pipelines. Problems in planning, design and operations.

Prerequisite: Junior standing, CE 8 and CE 20.

Corequisite: ENGR 100W.

Lecture 2 hours/lab 3 hours.

Grade of "C-" or better for CE majors required.

3 units

CE 122. Traffic Engineering

Design of traffic control systems to include traffic signals and other traffic control devices for safe and efficient vehicular flow; traffic surveys; traffic operations.

Prerequisite: Junior standing.

3 units

CE 123. Highway and Street Design

Geometric design of highways and streets.

Discussion of design policy. Safety and operational features as well as the evaluation of improvements.

Prerequisite: CE 20.

Corequisite: CE 121 (with a grade of "C-" or better for CE majors) or graduate standing.

3 units

CE 130. Civil Engineering Economic Analysis

Marginal theoretic procedures for identifying optimal investment alternatives. Algorithmic approaches to one-dimensional deterministic benefit-cost analysis. Multidimensional and probabilistic decision problems.

Prerequisite: Junior standing.

2 units

CE 131. Civil Engineering Law and Scheduling

Basic principles of law and scheduling as they apply to contracts. Contracts and specifications, professional liability, engineering ethics, U.S. legal system, tort liability, agency, arbitration, litigation, claims, disputes and construction planning

Prerequisite: ENGR 100W.

3 units

CE 132. Construction Methods and Equipment

Construction earthmoving, excavating, loading, compacting; safety; equipment productivity; construction methods and materials.

Prerequisite: CE 140 (with a grade of "C-" or better).

3 units

CE 133. Construction Structures

Design elements for timber and metal temporary structures, formwork, falsework, trenching, shoring and scaffolding, construction safety.

Prerequisite: CE 20, CE 160 (with a grade of "C-" or better).

Corequisite: CE 140.

3 units

CE 134. Project Management for Construction

Methods of planning and controlling construction including the participants, processes and techniques required to maintain the life cycle of a construction project. Planning construction operations, estimating, analyzing the bid process, jobsite operations and functions, safety, quality and scheduling.

Prerequisite: Junior standing in engineering.

3 units

CE 140. Soil Mechanics

Properties and action of soil related to engineering construction problems; drainage, settlement, strength, bearing capacity, stability and lateral earth pressures.

Prerequisite: CE 20, CE 112 (with a grade of "C-" or better), ME 111.

Corequisite: ENGR 100W.

Lecture 3 hours/lab 3 hours.

Grade of "C-" or better for CE majors required.

4 units

CE 141. Foundation Design

Design of spread footings, piers, piles and caissons. Analysis of mat foundations. Lateral loads and retaining structures. Eccentric and inclined foundation loads.

Prerequisite: CE 20, CE 140 (with a grade of "C-" or better).

3 units

CE 142. Construction Dewatering

Applications of soil mechanics to excavations and construction dewatering; groundwater hydrology and modeling; design of dewatering systems.

Prerequisite: CE 140 (with grade of "C-" or better).

3 units

CE 150. Water Resources Engineering

Hydraulics of pipes, complex pipe systems and networks, flow profiles in open channels, weirs, reservoirs, spillways, design of channels and related structures, and storm drainage design.

Prerequisite: CE 20 and ME 111.

Corequisite: ENGR 100W.

Lecture 3 hours/lab 3 hours.

Grade of "C-" or better required for CE majors.

4 units

CE 152. Engineering Hydrology

Hydrologic processes; streamflow, hydrographs and flood routing; groundwater hydraulics; flood frequency analysis.

Prerequisite: CE 150.

3 units

CE 153. Groundwater Flow and Transport

Study of subsurface flow theory: storage properties, Darcy's equation, the aquifer flow equation, heterogeneity and anisotropy, unsaturated flow, well hydraulics. Introduction to subsurface contaminant transport and remediation.

Prerequisite: MATH 133A, CE 130, CE 150 or instructor consent.

3 units

CE 154. Hydraulic Design

Design of hydraulic structures-reservoirs, dams, spillways, energy dissipators, outlet works, hydroelectric systems and flood control.

Prerequisite: CE 20, CE 150.

3 units

CE 160. Structural Mechanics I

Analysis of statically determinate beams, frames, arches, plane and space trusses. Displacement analysis and approximate analysis of statically indeterminate structures. Applications to preliminary building design. Introduction to computer analysis.

Prerequisite: CE 20, CE 112 (with a grade of "C-" or better).

Corequisite: ENGR 100W.

Lecture 3 hours/computation period 3 hours.

Grade of "C-" or better required for CE majors.

4 units

CE 161. Indeterminate Structural Analysis

Classical analysis of indeterminate structures; consistent deformations, slope-deflection and moment distribution. General methods of force and displacement analysis, matrix methods. Application of computer programs.

Prerequisite: CE 160.

3 units

CE 162. Structural Concrete Design

Strength design and alternative load and strength reduction factor theories of reinforced concrete. Design of beams, slabs, compression members, foundations and building frames. Design project required.

Prerequisite: CE 160.

Lecture 2 hours/design period 3 hours.

3 units

CE 163. Design of Steel Structures

Structural steel design elements for buildings and bridges, tension members, beams, columns, bolted and welded connections. Design project.

Prerequisite: CE 20, CE 160 (with a grade of "C-" or better).

3 units

CE 164. Design of Wood Structures

Design of structural elements for wood buildings. Horizontal and vertical plywood diaphragms for seismic and wind loads. Tension members, beams, columns and connections. Design project using the National Design Specifications and the Uniform Building Code.

Prerequisite: CE 20 and CE 160.

3 units

CE 165. Earthquake Resistant Design

Seismic resistant design according to the provisions of the Uniform Building Code. Elements of seismic hazard analysis.

Prerequisite: CE 160.

3 units

CE 170. Principles of Environmental Engineering

Environmental engineering problems: air and water pollution, hazardous materials, solid wastes. Natural and engineered systems for water and wastewater treatment. Design of water and sewage systems.

Prerequisite: CE 20, ME 111 and CHEM 1A.

Corequisite: ENGR 100W; and CE 150 (for Civil Engineering majors only).

Lecture 2 hours; lab/design 3 hours.

Grade of "C-" or better for CE majors required.

3 units

CE 172. Solid Waste Management Engineering

Introduction to engineering analysis, planning and design problems associated with storage, collection, processing, treatment and disposal of solid waste.

Corequisite: CE 170 or equivalent.

3 units

CE 173. Engineering for the Environment

Introduction to pollution prevention and environmentally conscious engineering and a review of impacts of engineering projects on the environment.

Prerequisite: CE 20.

Corequisite: CE 170.

3 units

CE 180. Individual Studies

Individual work on special topics by arrangement.

Prerequisite: Upper division standing.

Repeatable for credit

Credit / No Credit

1-3 units

CE 190. Numerical Solutions of Civil Engineering Problems

Reformulating linear and non-linear, static and dynamic civil engineering problems for numerical solution by computers.

Prerequisite: MATH 133A, ENGR 10 or equivalent, senior standing
2 units

CE 192. Probabilistic Models for Civil Engineering Decisions

Elementary concepts of probability theory, statistics and decision theory. Applications to modeling and decision-making.

Prerequisite: Junior standing in engineering.
2 units

GRADUATE

CE 210. Advanced Mechanics

Beams on elastic foundations, curved beams, torsion of non-circular sections, introduction to the theory of elasticity, three dimensional stress and strain, failure theories, deep beams.

Prerequisite: CE 161 and MATH 133A (or equivalent).
3 units

CE 212. Structural Dynamics

Analysis of lumped and distributed parameter systems subject to dynamic loading; matrix analysis and orthogonal functions applied to beams, frames and complex structures. Introduction to earthquake response spectrum analysis.

Prerequisite: CE 161 (or equivalent).
3 units

CE 216. Finite Elements with Civil Engineering Applications

Theory of finite elements applied to analysis and design of structures: plane stress and plane strain; axisymmetric and general solids; plates; axisymmetric and general shells; dynamic response and elastic instability.

Prerequisite: MATH 133A and CE 161 (or equivalent).
3 units

CE 220. Rigid and Flexible Pavement Design

Advanced study of the theories and practices in the structural design of flexible and rigid pavements for highways and airports; magnitude and arrangement of wheel loads; stresses in flexible and rigid pavements; pavement behavior under moving loads; design of bases and subbases; methods of structural design of flexible and rigid pavements; pavement evaluation, strengthening and selection criteria; accelerated traffic and loading tests.

Prerequisite: CE 120 and CE 140 (or equivalent).
3 units

CE 221. Advanced Highway Design

Advanced study of highway location and design principles; advanced analysis of criteria controlling geometric design of highways including design speed, design volume, vehicle requirements and capacity; advanced theory and practice in the design of alignment, grade and cross-section; design of intersections and interchanges; access control, frontage roads.

Prerequisite: CE 121 (or equivalent).
3 units

CE 222. Transportation Engineering Planning

Technical and economic evaluation of transportation improvements; capacity restraints; geometric design factors, location and relocation principles; optimization theory in transportation system design; user costs and benefits; transport equipment; operation and safety; economic impact, construction and maintenance practices; intergovernmental coordination, cooperation, responsibility and financial participation.

Prerequisite: CE 121 and CE 130.
3 units

CE 223. Airport Planning and Design

Determination and evaluation of requirements including planning, location and design of airports and heliports. Special emphasis on traffic operations and aircraft performance as related to design features such as site selection, configuration, geometric design, terminals, lighting and drainage.

Prerequisite: CE 121.
3 units

CE 224. Traffic Operations

Flow, density and speed characteristics. Capacity and level of service analysis of transportation facilities with emphasis on highways and streets. Analysis of strategies and tactics, including traffic control, related to optimal use of facilities.

Prerequisite: Instructor consent.
3 units

CE 225. Public Transportation Systems

Performance characteristics of public transportation systems. Planning, design and operational issues related to public transportation systems. Emerging technologies.

Prerequisite: CE 121 or instructor consent.
3 units

CE 226. Topics in Transportation Engineering

Presentation and discussion of special topics in transportation engineering. Topics may vary each semester. Course may be repeated with instructor consent.

Prerequisite: Graduate standing or instructor consent.
Repeatable for credit
3 units

CE 230. Construction Project Development

Operations required to develop construction projects from the preplanning to the construction stage including feasibility analysis, project development, construction funding, engineering economic analysis, marketing, starting a company and other aspects required to develop projects.

Prerequisite: CE 130.
3 units

CE 232. Construction Estimating and Cost Analysis

Estimating and bid preparation in the construction industry including cost analysis techniques for labor, materials, equipment and overhead costs on a construction project. Development of schedules and networks for construction.

Prerequisite: CE 130 and CE 131.
Repeatable for credit
3 units

CE 233. Construction Management

Provides a foundation of management skills appropriate for use in the engineering and construction industry such as management functions, time management, motivation, decision-making, conflict resolution, organizational design, leadership and the construction culture.

3 units

CE 234. Construction Law

Construction contracts and specifications, bid documents, sources of law, agency relationships, contract formation, breach of contract, tort law, contract interpretation, changes, mechanics liens, claims and disputes.

Prerequisite: CE 131 (or equivalent).
3 units

CE 235. Information Systems in Construction Management

Provides knowledge and skills to conceive, plan, organize, develop and implement construction decision support systems; decision and risk analysis techniques, construction computer applications, management information systems and data flow diagrams.

Prerequisite: CE 131, graduate standing or instructor consent.
3 units

CE 236. Construction Operations Analysis

Overall aspects of productivity improvement for construction operations. Quantitative methods for measuring, analyzing and improving productivity at job sites. Concepts of computer simulation to study, plan and optimize construction operations.

Prerequisite: CE 132 or instructor consent.
3 units

CE 240. Advanced Soil Mechanics

Rigorous study of classical and modern theories of soil mechanics and their application in engineering practice. Limitations of theories. Stress and deformation, consolidation, shear strength. Stability analysis by means of finite difference method.

Prerequisite: CE 140 (or equivalent).
3 units

CE 241. Groundwater, Seepage and Drainage Control

Permeability, flow net construction and seepage in soils. Groundwater, filter design, slope drainage, seepage control in earth dams and levees, foundation dewatering and pavement drainage.

Prerequisite: CE 140 (or equivalent).
3 units

CE 242. Experimental Soil Mechanics

Project-oriented laboratory studies of permeability and seepage, pore pressures, compressibility, expansibility and shear strength. Effects of structure and time. Study of exploration and sampling techniques, in-situ soil tests.

Prerequisite: CE 140 (or equivalent).
Lecture 2 hours/lab 3 hours.
3 units

CE 243. Advanced Foundation Engineering

Analysis and design of difficult and unusual foundations for engineering structures. Behavior of foundations under dynamic and earthquake loading. Laterally loaded piles.

Prerequisite: CE 141 (or equivalent).
3 units

CE 244. Earth Structures

Analysis and design of structures made of earth. Permeability, shear strength and compressibility of compacted soils. Field observations. Influence of available materials on design and construction.

Prerequisite: CE 140 (or equivalent).
3 units

CE 245. Geotechnical/Structural Seminar

Meetings for the presentation and discussion of special topics and case histories of significant engineering projects by the faculty, guest lecturers and graduate students. Topics will vary each semester. May be repeated for credit when content changes.

Prerequisite: CE 140 (or equivalent).

Repeatable for credit

3 units

CE 246. Soil Dynamics

Fundamentals of dynamic soil behavior, wave propagation in soils and its applications, foundation vibrations, earthquake problems.

Prerequisite: CE 140 and ME 101 (or equivalent).

3 units

CE 250. Water Resources Engineering

Technical, economic, legal, political, environmental and social factors in decision-making in water project planning and water resources development and management.

Prerequisite: Instructor consent.

3 units

CE 251. Hydraulics of Open Channels

Conveyance curves, the varied flow equation, specific energy, channel transitions, waves, routing of floods and super-critical flow.

Prerequisite: ME 111; Math 133A or instructor consent.

3 units

CE 252. Advanced Hydrology

Advanced topics in hydrograph analysis, flood routing, statistical methods and groundwater flow.

Prerequisite: CE 150 and CE 152.

3 units

CE 255. Sediment Transport

Introduction to sediment transport; concepts of bedload, suspended load, bed formation, stable channels and regime theory; environmental issues.

Prerequisite: CE 150.

3 units

CE 260. Matrix Analysis of Structures

Linear static and dynamic analysis of structures by matrix methods, including sidesway of frames and multistory buildings. Introduction to finite element analysis of structural systems. Discussion of computer-aided design of structures.

Prerequisite: CE 161 (or equivalent).

3 units

CE 261. Advanced Structural Concrete Design

Design of beams, columns, slabs, walls and connections according to provisions of the American Concrete Institute. Advanced topics in compression elements, shear torsion and development. Elements of bridge and building systems.

Prerequisite: CE 161 and CE 162 (or equivalent).

3 units

CE 264. Prestressed Concrete Design

Basic concepts and history; pretensioned and post-tensioned systems; prestress losses; cracking and ultimate moments; design of simple spans, continuous spans and slabs; composite beams; tanks.

Prerequisite: CE 161 and CE 162 (or equivalent).

3 units

CE 265. Advanced Seismic Design

Design of frames, shear walls and other building systems to resist earthquake accelerations. Applications of dynamic analysis. Introduction to performance-based engineering.

Corequisite: CE 212 or instructor consent.

3 units

CE 267. Advanced Steel Design

LRFD (Load Resistant Design) of steel structures, including buildings and bridges. Detailing of steel frames for seismic resistance. Structural details of connections.

Prerequisite: CE 163 or instructor consent.

3 units

CE 269. Advanced Topics in Structural Design

Concepts in reinforced masonry, seismic isolation, structural retrofitting, computer aided design and modern construction materials. Topics to be specified at beginning of semester. May be repeated for credit when content changes.

Repeatable for credit

3 units

CE 271. Physical/Chemical Processes in Environmental Pollution Control

Theory, analysis and engineering design of physical and chemical systems in environmental pollution control. Topics include mechanisms involved in physical/chemical destruction of pollutants, clarification, softening, coagulation and others.

Prerequisite: CE 170 or instructor consent.

Repeatable for credit

3 units

CE 272. Biological Processes in Environmental Pollution Control

Theory, analysis and engineering design of biological systems in environmental pollution control. Topics include mechanism of biological destruction of pollutants, aerobic and anaerobic processes, nutrient removals and others.

Prerequisite: CE 170 or instructor consent.

Repeatable for credit

3 units

CE 273. Water Treatment and Plant Design

Studies in the theory, design and operation of water treatment facilities. Water quality standards and water quality control.

Prerequisite: CE 170 or instructor consent.

Repeatable for credit

3 units

CE 274. Wastewater Treatment and Plant Design

Studies in the theory, design and operation of traditional primary and secondary sewage treatment facilities. Review of water pollution control laws and regulations.

Prerequisite: CE 170 or instructor consent.

Repeatable for credit

3 units

CE 275. Industrial and Hazardous Waste Management and Treatment

Study of industrial and hazardous wastes. Sources, characteristics, management, treatment and disposal. Effects on the environment.

Prerequisite: CE 170 or instructor consent.

Repeatable for credit

3 units

CE 276. Biosolids and Residual Management Engineering

Studies of the theory, design and operation of water and wastewater biosolids and residual management systems. Treatment and disposal alternatives including land application.

Prerequisite: CE 271 and CE 272.

Repeatable for credit

3 units

CE 279. Special Topics in Environmental Engineering

Current problems in environmental engineering. Course is repeatable for credit with instructor consent.

Prerequisite: Instructor consent.

Repeatable for credit

3 units

CE 290. Civil Engineering Analysis I

Study of mathematical techniques applicable to a broad range of problems. Included are topics in linear algebraic equations, ordinary differential equations, Fourier series, Bessel functions, Legendre polynomials and partial differential equations.

Prerequisite: MATH 133A.

3 units

CE 291. Civil Engineering Analysis II

Study of mathematical techniques applicable to a broad range of problems. Included are topics in functions of a complex variable and applications of conformal mapping and vector analysis.

Prerequisite: MATH 133A.

3 units

CE 292. Civil Engineering Economic Analysis

Principles of project feasibility and benefit analysis. Selected topics from utility and demand theory and from production theory, with applications in civil and environmental engineering. Study of unconstrained and constrained decision models in project planning.

Prerequisite: Instructor consent.

3 units

CE 297. Special Topics in Civil Engineering

Special topics to augment regularly-scheduled graduate courses.

1-4 units

CE 298. Special Problems

Advanced individual research and projects.

Repeatable for credit

Credit / No Credit

1-6 units

CE 299. Master's Thesis or Project

Prerequisite: Admission to candidacy for the MS degree.

Repeatable for credit

Credit/No Credit/Report in Progress

1-6 units

Communication Studies

College of Social Sciences

Hugh Gillis Hall 108
408-924-5360

Professors

Stephanie J. Coopman
Ge Gao
Hanns J. Hohmann
Dennis Jaehne, Chair
Wenshu Lee
Shawn Spano
Federico Varona

Associate Professors

Marquita L. Byrd
Deanna L. Fassett
Rona T. Halualani
Anne Marie Todd
Andrew F. Wood

Assistant Professors

Matthew Spangler

Curricula

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

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 – Speech Communication are prepared to enter the work world and/or 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 coursework 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, and self, society and equality in the U.S.

Our graduate program (MA – Communication Studies) 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 coursework 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.

BA – 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 Requirements45
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 Education2
Requirements in the Major42
Required Courses24
COMM 101, COMM 140, COMM 149, COMM 155, COMM 156, COMM 161, COMM 198 and COMM 199	
Electives18
Selected in consultation with advisor (COMM 182 recommended for students who plan to teach).	
Additional Courses15-21
A minor or a correlation of courses in related areas approved in advance by the advisor (a correlation of courses is a combination of 18 units, 12 of which must be upper division, drawn from one or more related departments. Special correlations have been prepared in media studies, business and organizational behavior, international and intercultural communication, behavioral science and pre-legal studies).	
Electives13
Total Units Required120

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 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, ENGL 068A or ENGL 068B, ENGL 105, ENGL 112B, ENGL 125A and ENGL 144 or ENGL 145 (18); LLD 104 or LLD 163 and ENGL 103 or LLD 107 (6); ENGL 161, ENGL 162, ENGL 163, ENGL 168 or ENGL 169 (3)

Requirements in the Major 41-42

COMM 101, COMM 140, COMM 149, COMM 155, COMM 161 and COMM 182 (18); COMM 100W or ENGL 100W (for English majors) (3); COMM 199 or EDUC 157 (2-3); Complete six courses from: COMM 110, COMM 111, COMM 130, COMM 169, COMM 172, COMM 174, COMM 175, COMM 176, COMM 195 (18)

Electives 7-8

Total Units Required 120

Minor – Speech Communication

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.

Total Units Required 18

Minor – Communication in the Information Age

The purpose of the new interdisciplinary minor Communication in the Information Age is to provide 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 6

MCOM 072 and COMM 181

Electives 12

Complete twelve units from: ARTH 072, ARTH 176A, RTVF 110, TA 141, TA 142

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 speech communication 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 speech communication 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 coursework in three areas: (a) introduction to the speech communication field, (b) social behavioral-empirical research methods, and (c) rhetoric and criticism.
4. A writing sample. Submit an appropriate upper division paper (preferably with grade and instructor's comments included). If such is not available, contact the graduate coordinator for additional options to fulfill this requirement.

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 speech communication. 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 30 units required for the MA – Speech Communication.

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 – Speech Communication. Admission to candidacy requires:

1. An approved program of study consisting of 30 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 – Communication Studies

All approved programs of study must include: COMM 200, COMM 201, and COMM 202.

Students may select additional courses, subject to the following requirements, for completion of the MA degree:

- At least 24 units must be on the graduate (200) level.
- At least 18 units must be graded (i.e., "A", "B", "C") work.
- At least 21 units must be taken in the Communication Studies Department.
- At least 9 units must be taken in seminars in the Communication Studies Department (note that the core courses are not considered to be seminars).

Students will complete their total of 30 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) 30

Core Courses 9

COMM 200, COMM 201 and COMM 202

Electives 15

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 complete a successful oral defense of the thesis, before a committee of not fewer than three members, that has been approved by the departmental graduate committee.

Plan B1 (Comprehensive Exam) 30

Core Courses 9

COMM 200, COMM 201 and COMM 202

Electives 21

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 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) 30

Core Courses 9

COMM 200, COMM 201 and COMM 202

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.

Special Project (Write and Defend) 3

Students will propose, for approval, a project and a supervising committee of no fewer than three members to the department graduate committee. The supervising committee chaired by a department faculty member, will oversee the student's project. Students will complete a successful project defense before the supervising committee, under the direction of the committee chair. The supervising committee may elect to involve a suitably qualified person from the community as part of the project and defense.

Total Units Required 30

Areas of Specialization within the Major

An MA – Communication Studies candidate may specialize in one or more areas of communication study.

- Communication and culture
- Communication education
- Communication theory
- Computer mediated communication
- Group communication
- Intercultural communication
- Interpersonal communication
- Language and meaning
- Nonverbal communication
- Organizational communication
- 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. Each of these areas can be supported by several undergraduate and graduate courses in the curriculum.

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.

Courses

COMMUNICATION STUDIES

LOWER DIVISION

COMM 010. Communication and Human Relationships

Course examines role of communication in developing/maintaining human relationships. Discussion focuses on relational communication processes as they occur in various settings, such as the intercultural, the family, the intimate, the organizational, the public and between/within genders.

GE: D1
3 units

COMM 020. Public Speaking

Principles of rhetoric applied to oral communication; selecting, analyzing, adapting, organizing and delivering ideas effectively.

CAN SPCH 4
GE: A1
3 units

COMM 020N. Public Speaking

Public speaking for the nonnative speaker. Course content identical to COMM 20 with intercultural emphasis.

Repeatable for credit
GE: A1
3 units

COMM 040. Argumentation and Advocacy

Principles of inquiry and advocacy in public discussion and necessary basic skills for intelligent participation in discussion and debate.

CAN SPCH 6
GE: A1
3 units

COMM 041. Critical Decision Making

Critical reasoning and problem solving in group discussion. Examination of the relationship between critical decision-making and group communication. Practice in group problem solving as a means for developing critical thinking skills.

GE: A3
3 units

COMM 045. Communication Criticism

Application of critical reasoning skills to public communication. Examination of rhetorical and cultural criticism and standards used to evaluate communication in a variety of contexts. Practice in evaluating arguments and becoming critical consumers of public messages.

3 units

COMM 060. Verbal Reasoning

Focus on analysis of propositions, assumptions and issues; uses of deductive and inductive reasoning in ordinary discourse; recognition of formal and informal fallacies of language and thought.

3 units

COMM 074. Fundamentals of Intercultural Communication

Emphasis on direct experience and the development of skill in intercultural communication. Provides opportunity for discussion of variations within and among cultures. Encourages students to examine their own cultural heritage.

3 units

COMM 080. Speech Communication Laboratory

Designed to help students improve their personal and professional communication capabilities. Teaching-learning techniques include tutor assistance, self-paced instructional modules and workshops.

Repeatable for credit
Credit / No Credit
1 unit

COMM 091J. Judge Training

Community service course designed to train students to judge high school speech and debate tournaments. Students are taught the rules and given criteria for judging each event in oral interpretation of prose poetry, and drama; platform speaking; debate; and Student Congress. Students are required to write cogent ballots that help competitors.

Credit / No Credit
1 unit

UPPER DIVISION**COMM 100W. Writing Workshop: Writing for Influence**

Current conventions and forms of exposition, argument and persuasion. Writing for the general and specialized audience from the thesis statement approach.

Prerequisite: ENGL 1B (with a grade of C or better); Completion of core GE, satisfaction of Writing Skills Test and upper division standing.
ABC/No Credit
GE: Z
3 units

COMM 101. Introduction to Communication Studies

Overview of the contemporary field of communication studies based on survey of theoretical and practical responses to communication problems arising from changing social contexts. Discussion of communication literature, resources and methods of inquiry. Students will begin their major portfolios.

Prerequisite: Completion of GE oral communication.
3 units

COMM 105. Communication, Self and Society

Role of communication in the struggle to construct a diverse and equitable society in the face of structural biases toward inequality across a variety of contexts, including interpersonal, intercultural, small group, organizational, public, and mediated communication.

Prerequisite: Upper division standing
3 units

COMM 110. Interpersonal Communication

Integration of theory and practice to facilitate student understanding and skills in evaluating and participating in interpersonal relationships across contexts and the lifespan.

Prerequisite: Completion of GE oral communication.
3 units

COMM 111. Interviewing

Setting and achieving communicative goals essential in preparing for and conducting interviews. Special attention on developing effective questions and responses. Participation in a variety of interviews, including employment, appraisal, journalistic, research, survey, health care, and persuasive.

Prerequisite: Completion of the GE oral communication.
3 units

COMM 115. Communication and Conflict

Focus on theories of communication as related to interpersonal and group conflict. Development of communication skills in conflict management, and applied activity in interpersonal conflict management.

Prerequisite: Upper division standing.
3 units

COMM 116. Mediation: Theory and Practice

Theoretical background and communication skills training in Mediation Practice. Basic 40 hours of training includes readings, analysis and role plays as well as some observation.

Prerequisite: Upper division standing.
ABC/No Credit
3 units

COMM 120. Persuasive Speaking

Speaking situations encountered in contemporary society. Principles of rhetoric applied to persuasive speaking. The effective selection, analysis, adaptation, organization and delivery of ideas.

Prerequisite: Completion of the GE oral communication.
3 units

COMM 121. Performance Studies

Exploration of performance as a site of communication and embodied practice. Will examine the many ways in which performance exists and operates in our culture with a focus on literature, ethnographic fieldwork, personal narrative, and everyday rituals.

Prerequisite: COMM 20 or equivalent.
3 units

COMM 122. Performing Self and Society

Exploration of performance as metaphor for individual personhood ("self") as well as sense of community ("society") belonging. Will examine the many ways in which performance exists and operates in our culture(s) with a focus on personal narrative, everyday rituals, and cultural difference(s). Likewise, "performance," as a presentational aesthetic, is the medium of assessment.

Prerequisite: Upper division standing or instructor consent.
3 units

COMM 130. Social Movements Communication

Study of theoretical and historical documents that reveal how social movements and protests have shaped and fueled political and cultural communication both nationally and internationally. Civil rights, women's liberation, GLBT, environmentalism, labor, global justice, and indigenous movements.

Prerequisite: Upper division standing.
3 units

COMM 133. Ethical Problems in Communication

Ethical problems encountered in business, industry and interpersonal settings and professional practice. Problems and issues related to use of information and investigation systems and right of privacy.

Prerequisite: Completion of the GE oral Communication.
3 units

COMM 140. Argumentation and Debate

Principles of argumentation including analysis of propositions, issues, evidence and reasoning. Training and experience in debate forms.

Pre/Corequisite: COMM 101.
3 units

COMM 141. Small Group Communication

An applied approach to small groups and teamwork that links theory and practice across a variety of contexts. Emphasis on the relationships between group communication and larger cultural issues, such as diversity and democracy.

Prerequisite: Completion of GE oral communication.
3 units

COMM 144. Organizational Communication

Communication processes and functions in organizational life. Networks, culture, power, leadership, and ethics. Practical application of organizational communication theories and concepts.

Prerequisite: Completion of GE oral communication.
3 units

COMM 145. Rhetorical and Cultural Criticism

Survey of leading theorists, critics and movements in the area of rhetoric and cultural studies. Examines interpretations of speech and discourse as an approach to understanding both real life issues and advanced work in communication studies.

Pre/Corequisite: COMM 101.
Offered only occasionally.
3 units

COMM 146. Communication and the Environment

Examination of communication in environmental issues, especially conflicting values and modes of discourse that assume different meanings of human-nature relationship. Emphasis on environmentalism as popular movement, rhetoric of radical ecology and the technical discourse of environmental policy administration.

Prerequisite: Completion of GE oral communication.
3 units

COMM 147. Argumentation and Persuasion in Courts of Law

Principles of legal argumentation, cross-examination, jury selection and strategy. Selected trial transcripts studied to explore differing uses of the trial forum.

Prerequisite: Completion of GE oral communication.
3 units

COMM 149. Rhetoric and Public Life

Knowledge of rhetorical theory and practice as they relate to public life, democratic governance and social conflict and consensus from the classical era to contemporary times.

Pre/Corequisite: COMM 101.
3 units

COMM 152. Communication in World Cultures

Origins of human communication studies in early societies, including those of China, Egypt, Greece, India, Mesopotamia and Rome. Special attention to the cultural origins of classic texts and significant patterns of communication which continue to inform our contemporary experiences.

Pre/Corequisite: COMM 101.
3 units

COMM 155. Quantitative Communication Inquiry

Quantitative social scientific approaches to communication facilitate students' understanding of the philosophical foundations of quantitative methods and skills in hypothesis testing, research design, data collection, analysis, and interpretation. Methods to be covered include experimental design, survey research and content analysis.

Pre/Corequisite: COMM 101.
3 units

COMM 156. Qualitative Communication Inquiry

Qualitative approaches to communication facilitate student understanding of the philosophical foundations of developing research questions, research design, data collection, analysis and interpretation. Methods covered include ethnography and participant observation, interviewing, textual/thematic analysis, focus groups, action research, and grounded theory.

Pre/Corequisite: COMM 101.

3 units

COMM 157. Community Action/Community Service

See EDUC 157.

Repeatable for credit

GE: S

3 units

COMM 160. Language, Meaning and Culture

Course addresses the question of how language, symbols and society work together. Students will learn about the nature of language and how language and symbols shape individual and collective actions.

Pre/Corequisite: COMM 101.

3 units

COMM 161. Communication and Culture

Human communication explored as a mechanism of control and as a vehicle of cultural change. Applies theoretical principles of communication to social issues and communication settings in different cultures.

Pre/Corequisite: COMM 101.

3 units

COMM 168. Global Climate Change I

Scientific and social scientific approaches to the process and effects of global climate change: Climate changes in the Earth's past, interactions between climate and life, anthropogenic climate change, socioeconomic contexts of environmental effects, cultural influences on climate change mitigation strategies.

Prerequisite: ENGL 1B (with a grade of "C" or better); Completion of core GE, satisfaction of Writing Skills Test and upper division standing.

6 units

COMM 168W. Global Climate Change II

Scientific and social scientific approaches to the process and effects of global climate change: Climate changes in the Earth's past, interactions between climate and life, anthropogenic climate change, socioeconomic contexts of environmental effects, cultural influences on climate change mitigation strategies.

Prerequisites: ENGL 1B (with a grade of "C" or better), completion of core GE, completion of COMM 168, satisfaction of Writing Skills Test and upper division standing.

ABC/No Credit

GE: R+S+V+Z

3 units

COMM 169. The Media: Response and Criticism

Examination of the media as a source of persuasion concerning roles we play, situations in which we find ourselves and activities appropriate to us and our society. Critical analysis of messages in TV, movies, radio and magazines.

Prerequisite: Completion of GE oral communication.

3 units

COMM 170A. Persuasion

Persuasion, social influence, and compliance-gaining in everyday life, with special attention on cognitive, learning, and attitude change theories. Emphasis on social and ethical implications of persuasive processes.

Prerequisite: Completion of GE oral communication
3 units

COMM 171. Visual Communication

Methods of developing visual figures of speech which parallel the verbal elements of style. Analyses of visual stimuli which shape attitudes, values and opinions.

Prerequisite: Completion of GE oral communication
3 units

COMM 172. Multicultural Communication in the United States

Analysis of the communication process between and among people in a culturally diverse domestic population (United States). Topics cover speech communication principles, conflict management, language, script analysis, attitudes and values. Includes both theory and activity-based exercises.

Prerequisite: COMM 101.
3 units

COMM 173. Intercultural Communication and Global Understanding

Analysis of communication among persons from different U.S. and world cultures. Experiences and research in intercultural communication. The influence of varying values, norms, belief structures and roles. Prejudice, ethnocentrism, nationalism and racism in communication.

Prerequisite: Upper division standing
3 units

COMM 174. Intercultural Communication

Analysis of communication among persons from different U.S. and world cultures. Experiences and research in intercultural communication. The influence of varying values, norms, belief structures and roles. Prejudice, ethnocentrism, nationalism and racism in communication.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: S
3 units

COMM 175. Nonverbal Communication

A look at differences between and the interdependency of verbal and nonverbal messages. Students will study the role of nonverbal communication in everyday life.

Prerequisite: Completion of GE oral communication
3 units

COMM 176. Communication and Gender

An analysis of issues and problems related to communication and gender. The course will consider theoretical and practical perspectives on male-female and same-sex interactions in a variety of situations and cultures.

Prerequisite: Completion of GE oral communication
3 units

COMM 180. Individual Studies

Supervised study in specific fields of speech not covered by offered courses.

Prerequisite: Department chair consent
Repeatable for credit
Credit / No Credit
1-3 units

COMM 181. Internet Communication

Explores impact of internet-based communication on social action, corporate environments and interpersonal relationships. Formation and management of online identities discussed. Introduction to online media construction and analysis with particular emphasis on the world wide web.

Prerequisite: Completion of GE oral communication
3 units

COMM 182. Communication in the Classroom

Analysis of the classroom as a communication system. Application of communication principles to the facilitation of educational dialogue.

Prerequisite: Completion of GE oral communication
3 units

COMM 184. Directed Reading

Prerequisite: Upper division or graduate standing and department chair approval. A total of 3 units may be repeated.
Repeatable for credit
Credit / No Credit
1-2 units

COMM 190. Activity Projects in Speech

Supervised activity in communication studies. Application of principles and theories of communication in business, community and professional settings.

Prerequisite: Upper division or graduate standing and department chair approval.
Repeatable for credit
Credit / No Credit
1-6 units

COMM 190I. Activity Project in Speech International

Supervised activity in communication studies for international students. Application of principles and theory of communication in business, community, and professional settings with specific attention to needs of visiting international students.

Prerequisite: Upper division or graduate standing, or department chair approval.
Repeatable for credit
1-6 units

COMM 191A. Activity Projects in Forensics

Supervised activity in the forensics program. A: Competition in debate. B: Individual events-Platform Speaking including persuasive speaking and communication analysis. C: Individual events oral interpretation (field trips required). J: Preparation for and judging competitive speaking activities (debates, individual events in college and high school forensics tournaments, community-sponsored speech contests). M: Research and oral presentation of appellate court arguments from simulated cases before law judges or in intercollegiate tournaments. A total of 6 units applicable to the major may be repeated.

Repeatable for credit
Credit / No Credit
1-3 units

COMM 191B. Activity Projects in Forensics

Supervised activity in the forensics program.
A: Competition in debate. B: Individual events-Platform Speaking including persuasive speaking and communication analysis. C: Individual events oral interpretation (field trips required). J: Preparation for and judging competitive speaking activities (debates, individual events in college and high school forensics tournaments, community-sponsored speech contests). M: Research and oral presentation of appellate court arguments from simulated cases before law judges or in intercollegiate tournaments. A total of 6 units applicable to the major may be repeated.

Repeatable for credit

Credit / No Credit

1-3 units

COMM 191C. Activity Projects in Forensics

Supervised activity in the forensics program.
A: Competition in debate. B: Individual events-Platform Speaking including persuasive speaking and communication analysis. C: Individual events oral interpretation (field trips required). J: Preparation for and judging competitive speaking activities (debates, individual events in college and high school forensics tournaments, community-sponsored speech contests). M: Research and oral presentation of appellate court arguments from simulated cases before law judges or in intercollegiate tournaments. A total of 6 units applicable to the major may be repeated.

Repeatable for credit

Credit / No Credit

1-3 units

COMM 191J. Activity Projects in Forensics

Supervised activity in the forensics program.
A: Competition in debate. B: Individual events-Platform Speaking including persuasive speaking and communication analysis. C: Individual events oral interpretation (field trips required). J: Preparation for and judging competitive speaking activities (debates, individual events in college and high school forensics tournaments, community-sponsored speech contests). M: Research and oral presentation of appellate court arguments from simulated cases before law judges or in intercollegiate tournaments. A total of 6 units applicable to the major may be repeated.

Repeatable for credit

Credit / No Credit

1 unit

COMM 191M. Activity Projects in Forensics

Supervised activity in the forensics program.
A: Competition in debate. B: Individual events-Platform Speaking including persuasive speaking and communication analysis. C: Individual events oral interpretation (field trips required). J: Preparation for and judging competitive speaking activities (debates, individual events in college and high school forensics tournaments, community-sponsored speech contests). M: Research and oral presentation of appellate court arguments from simulated cases before law judges or in intercollegiate tournaments. A total of 6 units applicable to the major may be repeated.

Repeatable for credit

Credit / No Credit

1 unit

COMM 195. Special Topics in Communication Studies

Investigation of topics not included in regular departmental offerings. Topics range from corporate training to communication in health settings to teaching speech in the high school. Focus varies each semester and is announced in the schedule of classes. Course is repeatable with department chair consent no more than 3 times.

Repeatable for credit

1-3 units

COMM 198. Applied Activity in Communication

Practical application of communication theory to real world settings to provide meaningful applied capstone experiences. Students demonstrate proficiency in the critical application of core communication requirements to speech acts and contexts outside the traditional classroom.

Repeatable for credit

Credit / No Credit

1-2 units

COMM 199. Senior Seminar in Communication Studies

Capstone overview of the contemporary field of Communication Studies that builds on basic theory and skills learned in COMM 101. Discussion of communication literature, resources and methods of inquiry in relation to democracy, diversity, globalization and technology. Students will complete their major portfolios.

Pre/Corequisite: COMM 101.

3 units

GRADUATE**COMM 200. Graduate Study in Communication**

History of and current research in the communication field; introduction to humanistic and social science methods and computer applications; theory-building and metatheoretical issues; reviewing and critiquing studies; preparing research questions/hypotheses and prospectus.

Prerequisite: Graduate standing.

3 units

COMM 201. Social-Behavioral Studies in Communication

Selected theories of communication; multiple methods in social and behavioral studies; qualitative observation and interviewing; quantitative research design, data collection and analysis; preparing research reports.

Pre/Corequisite: COMM 155 and COMM 200 (or equivalent).

3 units

COMM 202. Critical Studies in Communication

Emphasis on major rhetorical, critical and interpretive theorists and theories of communication; classical, modern and postmodern approaches; focus on methods for researching and writing scholarly work.

Pre/Corequisite: 3 units in rhetoric or criticism and COMM 200 (or equivalent).

3 units

COMM 210. Seminar in Interpersonal Communication

Examination of the role of communication in creating and maintaining social relationships. Draws on interpretive, critical, and/or quantitative theories and methods for investigating relationships in different cultural contexts and across the life span.

Prerequisite: Graduate standing.

3 units

COMM 240. Seminar in Argument and Debate

Advanced study of patterns, techniques, and theory of argumentation and advocacy as reflected in debates on significant issues in a variety of contemporary and historical settings.

Prerequisite: Graduate standing.

3 units

COMM 241. Seminar in Small Group Discussion

Exploration of group process and structure. Special attention given to democratic process, effective group decision-making, team-building concerns, group leadership, the distinctive place of communication research in small group studies.

Prerequisite: Graduate standing.

3 units

COMM 244. Seminar in Organizational Communication

Examination of internal communication processes in large organizations. Emphasis on information flow, communication networks, communication relations and the design and management of communication systems. Experience in gathering and analyzing data to monitor and assess a communication system.

Prerequisite: Graduate standing.

MBA recommended elective.

3 units

COMM 245. Seminar in Communication Criticism

Theories guiding critical evaluation of messages communicated in a variety of media, from oral to digital. Emphasis on the historical, political, and social contexts where such messages are designed, transmitted, interpreted, and used.

Prerequisite: Graduate standing.

Repeatable for credit

3 units

COMM 249. Seminar in the Philosophy of Communication

Study of philosophical models of communication, their foundations, insights, and implications for social practice.

Prerequisite: Graduate standing.

3 units

COMM 250. Seminar in Communication Theory: Critical and Interpretive

Major theorists and theories of communication in the rhetorical, historical, critical, empirical, and philosophical traditions.

Prerequisite: Graduate standing.

3 units

COMM 255. Seminar in Communication Theory

Review and evaluation of communication theories and research, past and present. Examination of methods of theory construction and scholarly inquiry. Experience in applying theory to designing and conducting communication research.

Prerequisite: Graduate standing.

3 units

COMM 260. Seminar in Language and Social Interaction

Study of how language, politics, and diverse cultures interrelate. Examines language use in interpersonal, intercultural, organizational, mass media, and online contexts.

Prerequisite: Graduate standing.

3 units

COMM 265. Seminar in Crisis Communication

Role of public communication in crisis situations; types of crisis; pre- and post-crisis planning; crisis communication management; risk communication; crisis narratives and rhetoric; ethical obligations of crisis communication; dealing with media; image restoration. Independent research project required.

Prerequisite: Classified Graduate Standing or instructor consent.

3 units

COMM 269. Seminar in Contemporary Communication

Advanced analysis of recent developments and trends in communication. Topics include globalization, symbolic power and creativity, media and information technology, and formation of cultural styles and identities.

Prerequisite: Graduate standing.

3 units

COMM 270. Seminar in Social Influence

Advanced study of social and cultural influences on the formation of attitudes about contemporary life, both private and public. Draws upon historical, political, interpretive, and quantitative studies of the covert and overt forms of persuasion.

Prerequisite: Graduate standing.

3 units

COMM 274. Seminar in Intercultural Communication

Advanced study in the processes of intercultural communication among diverse groups of people.

Prerequisite: Graduate standing.

3 units

COMM 280. Independent Study

Supervised study in specific fields of communication not covered by offered courses.

Repeatable for credit up to 3 units.

Prerequisite: Department Chair consent

Repeatable for credit

Credit / No Credit

1-3 units

COMM 282. Seminar in Communication Education

Investigation and analysis of problems related to the teaching of speech-communication at various levels, including higher education. Directed reading aimed at improving curricula and teaching practices.

Prerequisite: Graduate standing.

3 units

COMM 285. Communication Internship Seminar

Instruction and supervised experience in teaching university level courses in Communication Studies. Topics include curriculum design, instructional objectives and activities and evaluation.

Prerequisite: Appointment as departmental teaching intern or instructor consent.

Repeatable for credit

Credit / No Credit

1-3 units

COMM 295. Special Topics in Communication

Advanced consideration of selected topics in communication research and theory with emphasis on current literature. The topic will vary from term to term. Course may be repeated with instructor and advisor consent.

Repeatable for credit

3 units

COMM 298. Master's Project

Supervised project work in the field of Communication Studies.

Prerequisites: Admission to candidacy for the master's degree, completion of core requirements and instructor consent.

Repeatable for credit

Credit / No Credit

1-3 units

COMM 299. Master's Thesis

Supervised thesis work in the field of Communication Studies.

Prerequisites: Admission to candidacy for the master's degree, completion of core requirements and instructor consent.

Repeatable for credit

Credit/No Credit/Report in Progress

1-6 units

SPEECH EDUCATION**UPPER DIVISION****SPED 184Y. Student Teaching II – Classroom Teaching**

Minimum 80-120 class periods of classroom, teaching laboratory or field teaching in appropriate single subjects, grades K-12 and related teaching activities/seminar.

Prerequisite: Joint approval of major and Education departments.

Repeatable for credit

Credit / No Credit

4-6 units

SPED 184Z. Student Teaching III – Classroom Teaching

May be in different subject/school and will be at a different grade level.

See SPED 184Y.

Repeatable for credit

Credit / No Credit

4-6 units

GRADUATE**SPED 242C. Educational Internship in Teaching**

Designed to provide opportunity for supervised teaching on either the elementary or secondary school level on the basis of a special provisional credential.

Prerequisite: Matriculation as a Graduate student

Repeatable for credit

Credit / No Credit

4-6 units

SPED 257. Supervised Student Teaching in the Community College

Prerequisite: Permission of the instructor.

Credit / No Credit

4 units

SPED 382. Drama and Speech – Communication Curricula and Techniques

Content, bibliography, materials and methods in drama and speech-communication education.

Prerequisite: Joint approval of major and Education departments.

3 units

Computer Engineering

College of Engineering

Engineering 284
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Professors

Lee C. Chang
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Sigurd Meldal, Chair
Haluk S. Ozemek
Simon Shim

Associate Professors

Ahmet Bindal
Gilda Pour
Xiao Su
Leonard P. Wesley
Weider Yu

Assistant Professors

Magdalini Eirinaki

Curricula

- BS, Computer Engineering
- BS, Software Engineering (Jointly with Computer Science Department)
- MS, Computer Engineering
- MS, Software Engineering

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 skill set 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.

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 undergraduate Computer Engineering curriculum is accredited by the Accreditation Board for Engineering and Technology (ABET).

A few years after graduation, we expect the students of this program to have:

- Demonstrated an understanding of the fundamental knowledge that is a prerequisite for the practice of computer engineering, including its scientific principles and the importance of rigorous analysis and creative design.
- Demonstrated a practice-oriented, hands-on understanding of how to apply theoretical concepts to real world problems.
- Demonstrated clear communication skills, responsible teamwork, leadership, and professional attitudes and ethics.
- Successfully entered the engineering profession, and embarked on the process of life-long learning in engineering or other professional areas.

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 coursework 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.

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.

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 and BS Software Engineering students to progress toward the Master's degree in Computer Engineering or Software 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 or BS Software Engineering are eligible to apply to the combined program if they meet the following minimum eligibility requirements:

- Junior status and completion of 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 as technical elective units 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 Requirements24

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 Education2

Preparation for the Major35

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 Major73

Engineering Common Core14

CMPE 030, ENGR 010, ME 019, EE 097 and EE 098 (11); ME 109 or MATE 153 (3)

Required Courses in Engineering and Science50

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 Electives9

Selected in consultation with the student's advisor

Total Units Required134

Students must complete the following courses with a "C" or better to graduate. CMPE 046, CMPE 110, CMPE 124, CMPE 125, CMPE 126, CMPE 140, CMPE 195A, ISE 130; and the following courses with a "C" or better to graduate: MATH 30 or MATH 30P, MATH 31, MATH 32, PHYS 70 or PHYS 50.

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	6
Area of Specialization and Approved Electives	18
Thesis.....	6
Plan B (without Thesis)	30
Common Core	6
Area of Specialization and Approved Electives	18-21
Graduate Project.....	3-6
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 Studies and Research website at www.sjsu.edu/gradstudies.

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.

	Semester Units
Plan A (With Thesis)	30
Common Core	9
Area of Specialization and Approved Electives	15
Thesis.....	6
Plan B (Without Thesis)	30
Common Core	9
Area of Specialization and Approved Electives	15
Graduate Project.....	6
Total Units Required	30

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 Studies and Research website at www.sjsu.edu/gradstudies.

Courses

COMPUTER ENGINEERING

LOWER DIVISION

CMPE 025. The Digital World and Society

The secure, effective and ethical use of information technology. The effect of such technology on people and institutions. Technology-related challenges to society and policy. Frameworks for the analysis of information technology with respect to its cultural, historical, environmental, and spatial contexts.

3 units

CMPE 030. Programming Concepts and Methodology

Introduction to programming; overview of computer organization and introduction to software engineering. Topics include methodologies for program design, development, style, testing, and documentation; algorithms, control structures, functions, and elementary data structures.

Prerequisites: ENGR 10, MATH 30 or equivalent.

Lecture 2 hours/lab 3 hours.

3 units

CMPE 046. Computer Engineering I

Introduction to computing and computer engineering; problem solving with structured and object-oriented programming using the C++ language.

Prerequisites: ENGR 10, MATH 30.

Lecture: 2 hours/lab 3 hours.

3 units

CMPE 050. Object-Oriented Concepts and Methodology

Application of object-oriented software engineering techniques to the design and development of larger programs; data abstraction, structures, classes and associated algorithms. Topics include lists, stacks, queues, recursion, inheritance.

Prerequisite: CMPE 30 with a minimum grade of "C".

Lecture 2 hours/lab 3 hours.

3 units

UPPER DIVISION

CMPE 101. Programming Concepts and Problem Solving

Develop skills and proficiency in the design and implementation of solutions to computer engineering problems using structured and objective-oriented programming techniques using the C++ programming language.

Prerequisite: CMPE 046 with a grade of "C" or better.

Credit / No Credit

1 unit

CMPE 102. Assembly Language Programming

Principles of assembler-level programming of common microprocessors; finite arithmetic, memory access, use of registers, flow control, stack and procedure calls, arrays, text and keyboard access, BIOS and DOS interrupts, color graphics, recursion, and C++ compiler conversions.

Prerequisite: CMPE 50.

3 units

CMPE 104. Fundamentals of Software Engineering

Measuring the software process, software process improvement. Lifecycle Models Design, Requirements Analysis. Validation and Verification. Conceptual Models in Logical languages. Formal Processes Methods.

Prerequisite: CMPE 50 or CS 46B (with a grade of "C" or better in either course).
3 units

CMPE 110. Introduction to Digital Electronics

Passive RCL circuit analysis leading to transmission lines in chip wiring and I/O. NMOS and PMOS transistor I-V characteristics and large-signal equivalent circuits. Inverter ratio, bell curve, noise margin and power. Transistor-sizing in simple and complex CMOS gates to achieve optimum performance, area and power. Rise/Fall times, Rise/Fall delays in CMOS gates. Pass-gate circuits, flip-flops, latches and SRAM. BiCMOS circuits.

Prerequisite: EE 101 (with grade of "CR"), MATH 123 or MATH 133A (with a grade of "C" or better). Corequisite: CMPE 124.

Misc Lab: Lecture 2 hours/lab 3 hours.
3 units

CMPE 120. Computer Organization and Architecture

Introduction to computer organization and architecture, system buses, internal memory and external memory, input/output, central processing unit CPU, instruction sets, CPU structure and function, RISC, control unit.

Prerequisite: CMPE 50 (with grade of "C" or better).
3 units

CMPE 124. Digital Design I

Combinational and sequential logic theory and circuits. Emphasis on mixed logic and algorithmic state machines. Design projects using standard integrated circuit packages.

Prerequisite: EE 97, EE 98, EE 101, ENGR 10. Lecture 2 hours/lab 3 hours.
3 units

CMPE 125. Digital Design II

Digital system building blocks, data path and control units, system-level RTL design, Verilog HDL for design and verification, contemporary design flow and methodology, lab experiments using industry standard CAD tools and field programmable gate array (FPGA) devices.

Prerequisite: CMPE 124 (with grade of "C" or better). Lecture 2 hours/lab 3 hours.
3 units

CMPE 126. Algorithms and Data Structure Design

Object-oriented data organization and representation as strings, arrays, stacks, queues, deques, lists, sets, trees, tables, and graphs. Sorting and searching and algorithm design and performance analysis. Testing methods and data will be discussed.

Prerequisite: CMPE 101 (with grade of "CR") or CMPE 50 (with grade of "C" or better), ENGR 10. Repeatable for credit
3 units

CMPE 127. Microprocessor Design I

Microprocessor architecture and assembly language. Design of peripheral blocks and their interfaces to the microprocessor. Design projects using standard integrated circuit packages.

Corequisite: CMPE 125 (with a grade of "C" or better). Lecture 2 hours/lab 3 hours.
3 units

CMPE 130. File Processing

Physical and logical characteristics of data stored on external storage devices. File systems. Structures and access methods for data retrieval. Performance analysis.

Prerequisite: CMPE 126, ISE 130 (with grades of "C" or better). Repeatable for credit
3 units

CMPE 131. Software Engineering I

Why software engineering? What is software engineering? Software development lifecycle activities: project planning and management requirements analysis, requirement specification. Software design, software testing, verification, validation, and documentation. Software quality assurance and review techniques, software maintenance, team-based projects.

Prerequisite: For CMPE Majors: CMPE 126 with a grade of "C" or better.

For SE Majors: CS 46B with a grade of "C" or better.
3 units

CMPE 132. Information Security

A study of computer and network security from centralized systems to distributed networks. Cryptology, vulnerabilities and controls. Firewalls, privacy enhanced e-mail, viruses and worms. Case studies will be featured.

Prerequisite: CMPE 126.
3 units

CMPE 133. Software Engineering II

Software Architecture, Software Technical Metrics, evaluating products, processes, and resources, improving predictions, products, processes, and resources. Advanced topics such as: Formal Methods, Software Reuse, Reengineering, Client/Server Software Engineering, Computer-Aided Software Engineering, Team-Based Projects.

Prerequisite: CMPE 135.
Lecture 2 hours/lab 3 hours.
3 units

CMPE 133L. Software Engineering Laboratory II

Laboratory providing empirical reinforcement of the concepts taught in CMPE 133: The construction, integration, testing, deployment and maintenance of complex software systems. Explores organizational models for software development in teams, and the interplay of technical and human resource management.

Prerequisites: CMPE 135 .
Corequisite: CMPE 133.
1 unit

CMPE 135. Object-Oriented Analysis and Design

Feasibility analysis and system requirements determination, object-oriented design methodology, and information systems design using object-oriented modeling techniques. Emphasis on both theoretical and practical aspects of object-oriented systems analysis and design. Team-based design project.

Prerequisite: For SE Majors: CS 46B or for others CMPE 126.
3 units

CMPE 136. Information Engineering

Major topics include computer-based information systems, electronic commerce, database management, network management, mobile computing, reengineering concepts, virtual office, knowledge-base systems artificial intelligence, expert systems, Computer-Aided Software/Systems Engineering (CASE).

Prerequisite: ENGR 100W, ENGR 131, CMPE 135.
3 units

CMPE 137. Wireless Mobile Software Engineering

Mobility analysis, design principles, techniques, and methods for software systems on a variety of wireless and mobile Internet based computing and communication platforms, such as advanced pocket/tablet PCs, GPS, Bluetooth, Infrared, Wi-Fi, and RFID. Design multi-disciplined mobile project.

Prerequisite: CMPE 131.
3 units

CMPE 138. Database Systems I

File organization and storage structure, database system architecture, entity relationship model, normalization techniques, SQL, relational algebra, storage organization, query processing, and concurrency control.

Prerequisite: CMPE 126 (with grade of "C" or better).
3 units

CMPE 140. Computer Architecture and Design

Pipelining and timing issues in CPU data-paths. Principles of RISC-type CPU instruction set and architecture. Structural, data and control hazards in a RISC processor, forwarding loops, branch mechanisms. Memory architectures in CPUs such as register files and caches.

Prerequisite: CMPE 125 (with grade of "C" or better); ENGR 100W.
Lecture 2 hours/lab 3 hours.
3 units

CMPE 142. Operating Systems Design

Overview: history, concepts, system calls and structures. Management of major components: processors, memory, input/output and files. Design systems calls and device drivers for hardware dependence. Concepts of kernel and shell, file protection and interactive computation.

Prerequisite: CMPE 124, CMPE 126 (both with grade of "C" or better); ENGR 100W.
3 units

CMPE 143. Microcomputer Design

Microcomputer architecture using modern microprocessors and related integrated circuits: clock subsystem, BUS drivers, map decoders, R/W memory, ROM, serial and parallel I/O, DMA, interrupt.

Prerequisite: CMPE 127 (with grade of "C" or better). Lecture 2 hours/lab 3 hours.
Offered only occasionally.
3 units

CMPE 146. Embedded Microprocessor System Design

Embedded system architecture including microcontrollers, interfacing techniques for industrial applications using parallel, serial ports, A/D-D/A converters, transducers, and sensors. Single and multiple chip microprocessor systems.

Prerequisite: CMPE 127 (with a grade of "C" or better). Lecture 2 hrs/lab 3 hrs.
3 units

CMPE 147. Fundamentals of System on Chip (SoC) Design

Review of system timing for pipelined structures. ARM processor and its Advanced Microprocessor Bus Architecture (AMBA) protocol. The fundamentals of SRAM, SDRAM and E2PROM and their interfaces with AMBA. Direct Memory Access (DMA) design and its interface with AMBA. Verilog skills are required for the labs.

Prerequisite: CMPE 125 and CMPE 127 (with grades of "C" or better in each).

2 hours seminar/3 hours lab.

3 units

CMPE 148. Computer Networks I

Comparative evaluation of microcomputer network architectures, ISO/OSI model, standards, protocol examples for ISO layers. Ethernet, token bus, token ring topologies and protocols for LANs. Applications in transaction processing, distributed data processing and other areas. Design of a network architecture suitable for microcomputers.

Prerequisite: For CMPE Majors: CMPE 50 and (CMPE 124 or EE 118).

For SE Majors: CS 46B and CMPE 120.

3 units

CMPE 149. Computer Networks II

Protocol design and simulation in local and metropolitan area networks.

Prerequisite: CMPE 148.

Lecture 2 hours/lab 3 hours.

3 units

CMPE 152. Compiler Design

Principles of lexical analysis, finite state automata and parsing; issues of variable declarations, variable types, control statements, function calls, nested scopes and efficient assembler target code.

Prerequisite: CMPE 126, CMPE 102 (both with grade of "C" or better).

Lecture 2 hours/lab 3 hours.

3 units

CMPE 155. Computerized Robots

Introduction to kinematics, dynamics and control of robot manipulators. Forward and inverse kinematics of serial chain manipulators. Jacobian, force relations, dynamics, position and force controls. Hardware architecture for robotic control. Individual laboratory projects.

Prerequisite: CMPE 130 (with grade of "C" or better) and MATH 129A.

Lecture 2 hours/lab 3 hours.

Offered only occasionally.

3 units

CMPE 160. Knowledge-based Embedded Systems

Concepts, techniques, and methods to design and develop knowledge-based real-time embedded software systems. Application areas include network management, monitoring and control of complex systems, distance learning, Internet search agents, and robotics. Topics covered include knowledge representation, inference techniques, design, testing and performance evaluation of real-time embedded systems.

Prerequisite: CMPE 130, CMPE 142 (with grades of "C" or better) or instructor consent.

3 units

CMPE 163. Computer Graphics Program Design

Introduction to principles of computer graphics. Elementary operations in two and three dimensional space. Homogeneous coordinates, projective transformations. Algorithms for clipping, hidden surface removal, initializing. Graphic system design. Individual laboratory projects.

Prerequisite: CMPE 50; CMPE 125; ENGR 100W; MATH 123 or MATH 129A or EE 112.

3 units

CMPE 164. Wireless Networks Architecture and Design

Wireless Network Design and Architecture, including the communication theory, communication protocols, wireless processors and system level design, Based Band encoding and communications, IF/RF communications, error correction coding, and system level implementation.

Prerequisite: CMPE 127 and CMPE 140.

3 units

CMPE 165. Software Engineering Process Management

Integrated approach to managing development within small teams; including mission statement, synthesis of design concepts, tradeoff studies, risk assessment and the interactions encountered in the optimal design, development, manufacture and test of systems.

Prerequisite: CMPE 133.

3 units

CMPE 168. Software Design Studio I

Advanced software requirements elicitation, analysis and documentation. Software architectural design. Software team process infrastructure. Technical management of software development teams and resource estimation to support appropriate levels of quality. Quality assurance planning and execution.

Prerequisite: CMPE 133, CMPE 104, CMPE 138, CS 146, CS 157A or instructor consent.

Co-requisite: CMPE 195A.

Lecture 2 hours/Lab 3 hours.

3 units

CMPE 169. Software Design Studio II

Management of the software construction process: Team organization models, advanced development environments, configuration management. Software unit, integration and acceptance testing; management of deployed software: version control, defect tracking and technical support.

Prerequisite: CMPE 168.

Co-requisite: CMPE 195B.

Lecture 2 hours/Lab 3 hours.

3 units

CMPE 179. Digital Design Using Hardware Description Languages

See EE 179.

Repeatable for credit

3 units

CMPE 180. Individual Studies

Individual work in computer engineering.

Prerequisite: Upper division standing and instructor consent.

Repeatable for credit

Credit / No Credit

1-3 units

CMPE 187. Software Quality Testing

Software quality control, software testing concepts, methods, strategies, coverage criteria, test automation.

Prerequisite: CMPE 131 or instructor consent.

3 units

CMPE 189. Special Topics in Computer Engineering

Advanced topics in Computer Engineering.

Content varies from semester to semester.

Prerequisite: Instructor consent.

3 units

CMPE 195A. Senior Computer Engineering Design Project I

Individual or group design projects. Proposal preparation with plans and specifications; oral and written reports; professional seminars.

Prerequisite: For CMPE Majors: CMPE 125; CMPE 127; CMPE 130; CMPE 131; ISE 130; ENGR 100W; major form on file.

For SE Majors: CMPE 131, ISE 130 or MATH 161A, CS 100W or ENGR 100W; major form on file.

1 unit

CMPE 195B. Senior Computer Engineering Design Project II

Constructions, testing, and evaluation of the design from 195A culminating in demonstrations and written and oral presentations to faculty and peers.

Prerequisite: CMPE 195A (with grade of "C" or better).

Lab 9 hours.

3 units

CMPE 197. Cooperative Education Project

See ENGR 197.

3 units

CMPE 198. Technology and Civilization

See TECH 198.

GE: V

3 units

GRADUATE

CMPE 200. Computer Architecture

Design of CISC and RISC user instruction sets and micro-program instruction sets. Data flow architecture: registers, ALU, shifter, I/O, memory, interrupt. Microcontroller architecture and state machine.

Prerequisite: Classified graduate standing or graduate advisor consent.

3 units

CMPE 202. Software Systems Engineering

Integrated approach to software design and development including requirements elicitation and analysis, system design and construction through studying multiple facets of software development processes, design methodologies, modeling approaches, and implementation techniques.

Prerequisite: Classified graduate standing or instructor consent.

Lecture 2 hours/lab 3 hours.

3 units

CMPE 203. Software Engineering Management

Processes of developing software systems from the perspective of team leadership; line and project management responsibilities and tasks to cope with the dynamic nature of software technologies and environments.

Prerequisite: Classified graduate standing or graduate advisor consent.

3 units

CMPE 204. Computer Design Laboratory

Design and implementation of small to medium scale digital systems using state of the art integrated circuits including gates, flip-flops, registers, ALUs, memories and display units. Individual projects.

Prerequisite: CMPE 200.
Seminar 1 hour/lab 3 hours.
2 units

CMPE 205. Microprogramming

Advanced topics dealing with microprogramming including microprogram control, writeable control storage and design specifications. Microprogram representation, machine representation and the emulation of conventional and abstract machines. Individual projects.

Prerequisite: CMPE 200.
3 units

CMPE 206. Computer Network Design

Network topology and queuing theory. The seven layers of the ISO reference model: physical, data link, network, transport, session, presentation and application. Example networks. Network design project.

Prerequisite: Classified graduate standing or graduate advisor consent.
3 units

CMPE 207. Network Programming and Application

Development and implementation of Networking Software for building distributed applications. Application Programming Interfaces: BSD Sockets, Winsock, X/Open Transport Interface, Remote Procedure Call and Middleware.

Prerequisite: CMPE 206, or instructor consent.
2 hours lecture/3 hrs lab.
3 units

CMPE 208. Network Architecture and Protocols I

Implementation of protocols in current practice. TCP/IP, domain name systems, interactive data flow and network management protocols. Topics will cover FTP as well as NFS protocols.

Prerequisite: CMPE 206 or instructor consent.
Lecture 2 hours/lab 3 hours.
3 units

CMPE 209. Network Security

Network security protocols and applications, cryptography algorithms, authentication systems, intrusion detection, network attacks and defenses, system-level security issues, and how to build secure systems.

Prerequisite: CMPE 206 or EE 281.
3 units

CMPE 211. Computer Memory Design

Theory, design and applications of major types of computer memory devices and systems. Error detection and correction. Hardware implementation of a memory system.

Prerequisite: CMPE 125.
Pre/Corequisite: CMPE 200.
3 units

CMPE 212. Computer Design

Hardware implementation of a computer architecture using modern integrated circuits. Complete hardware design of a digital computer.

Prerequisite: CMPE 200 or instructor consent.
3 units

CMPE 213. Parallel Processing

Parallel processing hardware, software, and applications. State-of-the-art description of parallel architectures, communication operations, parallel programming models, parallel algorithms, and performance analysis.

Prerequisite: Classified graduate standing or instructor consent.
Lecture 2 hours/lab 3 hours.
3 units

CMPE 217. Human Computer Interaction

See ISE 217.

3 units

CMPE 219. Research in Human Computer Interaction

See ISE 219.

3 units

CMPE 220. System Software

System software overview, assemblers, macro-assemblers, loaders and linkers, compilers and operating systems. Design project.

Prerequisite: Classified graduate standing or graduate advisor consent.
3 units

CMPE 221. Software Systems Analysis and Design

Software development process, modeling languages, object-oriented analysis and design, architectural patterns, design patterns, software development tools, and group design projects.

Prerequisite: CMPE 202 or CMPE 220 or instructor consent.
Lecture 2 hours/lab 3 hours.
Repeatable for credit
3 units

CMPE 222. Programming Language Design

Major issues and alternatives in design of contemporary programming languages. Run-time structures implementing key language constructs. Statement-oriented, object-oriented and functional programming languages.

Prerequisite: CMPE 220.
3 units

CMPE 223. Advanced Compiler Design

Advanced topics on the theory, design and implementation of assemblers, compilers and translators. Compilation of expressions and statements. Organization of a compiler including syntax scan, object code generation, error diagnostics and overall design.

Prerequisite: CMPE 220.
2-3 units

CMPE 224. Microcomputer Laboratory

A realistic experience in the development and maintenance of a significant computer software project. Graphics user interface design.

Prerequisite: CMPE 220 or instructor consent.
3 units

CMPE 225. Operating System Design

Theory of operating systems: concepts, system calls, O/S structures, process management, input/output, memory management and file systems. Application of theory to a real operating system.

Prerequisite: CMPE 142.
Pre/Corequisite: CMPE 220.
3 units

CMPE 226. Database Systems

Database concepts and architecture. Logical and physical data organization. Relational, hierarchical and network databases. Security/integrity, recovery/concurrency. Design project.

Prerequisite: CMPE 200 or instructor consent.
3 units

CMPE 227. Distributed Systems

Motivation for distributed systems, communications issues in distributed computing, design issues and alternative computing models.

Prerequisite: CMPE 220.
3 units

CMPE 228. Performance Analysis of Concurrent Systems

Evaluation of concurrent computer systems using analytic, simulation and benchmark techniques. Building and selecting benchmarks, product form algorithms and statistical analysis of benchmarks and simulation results. Laboratory measurements of synthetic workloads.

Prerequisite: CMPE 225 or instructor consent.
3 units

CMPE 232. Component-Based and Reuse-Driven Software Engineering

Advanced topics in industrial object-oriented and reuse-driven software engineering, processes, software architecture, architectural style, organizing a reuse business, and industrial examples of systematic large-scale software reuse. Team-based projects.

Prerequisite: ENGR 200W, CMPE 220, CMPE 221, CMPE 271 or instructor consent.
3 units

CMPE 234. Multimedia System Design

Multimedia software systems concepts and architecture. Topics include multimedia retrieval, representations, multimedia databases, geographic information systems. R-tree, video databases, and multimedia operating systems. Design of high performance media servers.

Prerequisite: CMPE 142 and CMPE 220 or instructor consent.
3 units

CMPE 235. Mobile-Based Software System Design

Study of design methods for wireless-based software systems in infrastructures and frameworks, advanced wireless security, enable technology selection, location detection, service discovery, profile management. Application subjects include wireless messaging systems, payment, advertising, location portals, and mobile agents.

Prerequisite: CMPE 220 or CMPE 202 or instructor consent.
3 units

CMPE 236. Web-Based Application Systems and Tools

Fundamental web concepts, web technology, web system architectures, web security, web system design and methods, search engine, web authoring, Internet groupware, and basics of E-commerce.

Prerequisite: CMPE 271 and CMPE 220 or CMPE 202.
3 units

CMPE 237. Design of E-Commerce Systems

Current e-commerce concepts, business models, electronic transaction processing, e-commerce security problems and solutions, e-commerce systems and components, electronic auctions and negotiation, trading methods, business framework for e-commerce applications, and web advertising and marketing.

Prerequisite: CMPE 271 and CMPE 220 or CMPE 202.
3 units

CMPE 238. Agent-Oriented Enterprise Software Engineering

Key concepts of agent-oriented enterprise software engineering, agent technologies, multi-agent systems, software agents and workflows for enterprise application system engineering. Industrial examples. Team-based projects.

Prerequisite: ENGR 200W, CMPE 220, CMPE 221, or instructor consent.

3 units

CMPE 240. Advanced Microcomputer Design

Hardware implementation of a microcomputer architecture using modern microprocessors and related integrated circuits: clock subsystem, bus drivers, map decoders, R/W memory, ROM, serial and parallel I/O, DMA, interrupts.

Prerequisite: CMPE 127 or instructor consent.

3 units

CMPE 241. Embedded System Development Tools

Advanced topics dealing with embedded system development software tools, including system monitors, macro assemblers, in-circuit emulators, simulators, cross compilers, cross assemblers and interpreters.

Prerequisite: CMPE 240 or instructor consent.

3 units

CMPE 242. Embedded Hardware Design

Advanced topics dealing with microprocessor and microcontroller hardware and firmware including processor architecture, advanced memory and I/O systems design, multilevel bus architecture, interrupt systems. Design project.

Prerequisite: CMPE 240 or instructor consent.

3 units

CMPE 243. Embedded Systems Applications

Embedded system interfacing techniques; peripheral devices; discussion of industrial, telecommunication, automotive, medical, and consumer applications of embedded systems. Design project.

Prerequisite: CMPE 242 or instructor consent.

3 units

CMPE 244. Embedded Software

Experiments dealing with advanced embedded software programming concepts, interfacing techniques, hardware organization and software development using an embedded systems. Individual projects.

Prerequisite: CMPE 200, CMPE 220 or instructor consent.

Lecture 2 hours/lab 3 hours.

3 units

CMPE 245. Embedded Wireless Architecture

Embedded Wireless architecture with basic communication protocols, hands on labs with state of the art embedded system development tools.

Prerequisites: CMPE 240, or instructor's consent.

3 units

CMPE 250. Computerized Robots

Evolution of computerized robots, overview of robot applications, robot system elements, artificial intelligence, pattern recognition, computer controlled functions, robot controllers, survey of computerized robot products and future trends in robot technology.

Prerequisite: Classified standing or instructor consent.

3 units

CMPE 251. Software Techniques in Robotics

Discussion of software methods in robotics, robot programming languages, robot architecture and operating systems, robot interfacing and robot task software. Extensive software projects dealing with robots.

Prerequisite: CMPE 250 or instructor consent.

3 units

CMPE 252. Computer Hardware Techniques in Robotics

Computer hardware tools and techniques for robots, embedded microprocessors, real-time microprocessor networks, computer architecture for vision, three-dimensional computer vision, computer controlled robot clusters, stand-alone versus distributed robotics, design of computerized robot controllers and extensive computer hardware projects dealing with robots.

Prerequisite: CMPE 250.

3 units

CMPE 254. Computerized Robots Laboratory

Design and implementation of experiments dealing with robot applications, robot task software, robot operating systems, robot interfacing, computer vision and other hardware and software techniques. Individual projects.

Prerequisite: CMPE 250.

Lecture 1 hour/lab 3 hours.

2 units

CMPE 260. Computer Applications

Special features of CPU memory, storage and input-output equipment for computer applications in different fields. Hardware and software aspects of computer security. Architecture, hardware and software aspects of fault tolerant computers.

Prerequisite: CMPE 200.

3 units

CMPE 261. Real Time Computer System

Applications of real time computer systems in different fields; characteristics, hardware and software aspects of real time systems; design of real time systems; application programs, files, databases and operating systems for real time systems; testing and debugging of real time systems.

Prerequisite: CMPE 240.

3 units

CMPE 262. Video Compression, Architecture, and Design

Component vs. composite video, two-dimensional sampling theory, video digitization, adaptive quantization, Huffman coding, arithmetic coding, adaptive arithmetic coding, CDT and Wavelet transform, motion estimation, MPEG implementations, H.32X standards.

Prerequisite: CMPE 220, C/C++.

3 units

CMPE 264. Advanced Digital and Computing System Design

Advanced topics in register-transfer-level design of complex digital functional blocks, application-specific instruction set processors, and system-level integration/validation using Verilog/VHDL/C-level hardware description languages.

Prerequisite: CMPE 200 or instructor consent.

3 units

CMPE 270. Information Engineering

See ISE 270.

3 units

CMPE 271. Advanced Java Programming

Language, environment tools for Mobile Object Application Construction; object-oriented software engineering principles and practices highlighting mobile objects design and performance; laboratory applications and applets with Java IDE.

Prerequisite: High-level language.

Lecture 2 hours/lab 3 hours.

3 units

CMPE 272. Enterprise Software Overview

Introduction to enterprise software systems. Covers network operating systems, DbMS, transaction monitors, groupware, distributed objects, system management and the Web. Covers standards such as J2EE, CORBA, SQL, JDBC, and HTTP; and emerging technologies.

Prerequisite: Classified graduate standing or instructor consent.

3 units

CMPE 273. Enterprise Distributed Objects

Introduction to distributed objects and object request brokers. In depth study of the CORBA standard and object services. Also covers the DCOM ORB. Lab is based on building CORBA distributed object systems.

Prerequisite: Java programming, CMPE 272 or instructor consent.

Lecture 2 hours/lab 3 hours.

3 units

CMPE 274. Business Intelligence Technologies

This course covers technologies that are key to delivering business intelligence to an enterprise. The goal of business intelligence is to analyze and mine business data to understand and improve business performance by transforming business data into information into knowledge.

Prerequisite: CMPE 272, CMPE 273.

Lecture 2 hours/lab 3 hours.

3 units

CMPE 275. Enterprise Software Components

Applications development using components and distributed objects; introduces commercial J2EE component infrastructures and component frameworks; integration techniques; lab uses commercial component construction tools.

Prerequisite: Java Programming, CMPE 273 or instructor consent.

Lecture 2 hours/lab 3 hours.

3 units

CMPE 276. XML for E-Business

XML technologies for enabling e-business. Covers XML, (Namespaces), DTD, XML Schema, (DTD and XSD), XML APIs (SAX and DOM) XML languages (XPath, XPointer, and XSLT), and XML databases (XQuery). Lab is based on Xerces/Xalan, DTC/XSD, SAX/DOM, and XSDLT.

Prerequisite: CMPE 273.

Corequisite: CMPE 275 or instructor consent.

3 units

CMPE 277. Mobile Technologies for Enterprise Applications

Architectures, technologies, and programming concepts for developing applications for handheld devices. Focus is on using Java and XML for developing applications that run on mobile devices that connect to enterprise services.

Corequisite: CMPE 275, CMPE 276 or instructor consent.

3 units

CMPE 278. Advanced Enterprise Components

Server-side component construction on the J2EE application server platform focusing on the use of design patterns and advanced technologies. Includes UML modeling, database, user interface design, component testing, packaging and installation, and J2EE clustering. Team development is emphasized.

Prerequisite: CMPE 275.
Lecture 2 hours/lab3 hours.
3 units

CMPE 279. Software Security Technologies

The course provides the fundamental concepts, methods and tools used to design and implement software security technologies for constructing trustworthy centralized, distributed or enterprise-wide software systems.

Prerequisite: CMPE 220 or CMPE 202 or instructor consent.
3 units

CMPE 285. Software Engineering Processes

Topics include software systems requirements; the software product life cycle; modern language concepts including information hiding, inheritance and concurrency; design, implementation and validation of software systems.

Prerequisite: CMPE 202 or CMPE 220 or instructor consent.
Lecture 2 hours/lab 3 hours.
3 units

CMPE 286. Advanced Software Engineering Processes

Object-oriented analysis/design methodologies, tools and measures. A software maturity model used to explain the evolution of software processes. Advanced systems, networks and architectures.

Prerequisite: CMPE 285 or instructor consent.
Lecture 2 hours/lab 3 hours.
3 units

CMPE 287. Software Quality Assurance and Testing

Planning and implementing software quality testing programs. Software quality methodologies, inspections, white box and black box testing, static and dynamic analysis. Emphasis on applied testing techniques.

Prerequisite: CMPE 202 or instructor consent.
Lecture 2 hours/lab 3 hours.
3 units

CMPE 290. Computer Engineering Research and Development Methods

Discussion of research and development methods and current R&D topics in computer engineering. Selection of topics for individual projects. Literature search, intensive readings, discussions and reports. Completion of individual project plans.

Prerequisite: CMPE 200.
3 units

CMPE 294. Computer Engineering Seminar

Provides graduate students with a background to conduct research, write proposals and present results in oral and written form.

Prerequisite: Instructor consent.
ABC/No Credit
3 units

CMPE 294L. Graduate Laboratory

Advanced laboratory in computer or software engineering to augment regularly-scheduled graduate courses and laboratories. Contents vary from semester to semester. May be repeated when content changes.

Prerequisite: Instructor consent.
Lab 3 hours.
Repeatable for credit
Credit / No Credit
1 unit

CMPE 295. Computer Engineering Project

Design and implement an approved computer engineering project. A formal report and oral presentation are required.

Prerequisite: CMPE 200, CMPE 220, ENGR 100W, classified standing, candidacy form on file.
Lab 9 hours.
Culminating experience for the master's degree.
3 units

CMPE 295A. Project I

In-depth developmental engineering work relating to problems of interest to an individual or a group of students. Project includes proposal formulation, analysis, design, implementation, and testing.

Prerequisite: Completed core courses and classified status.
Lab 9 hours.
3 units

CMPE 295B. Project II

Students complete an in-depth project, write a detailed project report and make a comprehensive presentation and demonstration of project.

Prerequisite: Admission to Candidacy of Master's Degree and CMPE 295A.
Lab 9 hours.
3 units

CMPE 297. Special Topics in Computer Engineering

Special topics to augment regularly-scheduled graduate courses.

Prerequisite: Instructor consent.
Repeatable for credit
1-4 units

CMPE 298. Special Problems

Advanced individual work in computer engineering.

Prerequisite: Instructor consent.
Repeatable for credit
Credit / No Credit
1-6 units

CMPE 298I. Computer/Software Engineering Internship

Field work for computer and software engineering graduate students. A report is required at the end of the semester addressing the goals set at the start of the assignment.

Prerequisite: 9 units of graduate courses and advisor consent.
Repeatable for credit
Credit / No Credit
1-6 units

CMPE 299. Master's Thesis

Prerequisite: Admission to candidacy for the master's degree and approval of the thesis advisor. ENGR 100W (or equivalent).
Repeatable for credit
Credit/No Credit/Report in Progress
1-6 units

CMPE 299A. Master Thesis I

The first part of a thesis culminating the work for the master's degree in the specialization.

Prerequisite: Completed core courses and classified status.
Credit/No Credit/Report in Progress
3 units

CMPE 299B. Master Thesis II

The second part of a thesis culminating the work for the master's degree in the specialization.

Prerequisite: Admission to Candidacy of Master Degree and CMPE 299A.
Credit/No Credit/Report in Progress
3 units

Computer Science

College of Science

MacQuarrie Hall 208
408-924-5060
www.cs.sjsu.edu

Professors

Agustin A. Araya
Michael J. Beeson
Robert Chun
Cay S. Horstmann
Sami Khuri
Sin-Min Lee
Tsau Y. Lin
Kenneth Louden, Chair
Sigurd Meldal
Melody Moh
Jon Pearce
Chris Huan-Chi Tseng

Associate Professors

Christopher Pollett
Jeffery D. Smith
Mark Stamp

Assistant Professors

Suneuy Kim
Teng-Sheng Moh
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

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. A permanent advisor is assigned during the first semester. Transfer and second baccalaureate students need to complete course equivalency forms with an advisor during that 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 Windows XP Professional, six Sun workstations running the Solaris (Version 9) operating system, and eight Pentium 3 PCs running only Linux (Fedora Core 5). 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 coursework. 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 Accreditation Board for Engineering and Technology (ABET), a specialized accrediting body recognized by the Council for Higher Education Accreditation (CHEA) and the Association of Specialized and Professional Accreditors (APSA). 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 Requirements36
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 Education2
Support for the Major36
MATH 030 (3); MATH 031 (4); MATH 032, MATH 142 or MATH 163 (3); MATH 042 and MATH 129A (6); MATH 161A or MATH 164 (3); 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 Major47
Lower Division14
CS 046A, CS 046B and CS 047 (11); CS 049C or CS 049J (3)	
Upper Division24
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 or CS 161 (3)	
Elective Computer Science Courses Not Counted Above9
Only 3 units of CS 85 and CS 185 can be used. CS 180, CS 180H and Math 203 require prior approval. Complete at least 6 units from among: CS 116A, CS 123A, CS 130, CS 153, CS 155, CS 156, CS 157A, CS 157B, CS 158A, CS 158B, CS 159, CS 161, CS 166, CS 174, CS 180L. Complete three 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 153, CS 155, CS 156, CS 157A, CS 157B, CS 158A, CS 158B, CS 159, CS 161, CS 166, CS 172A, CS 172B, CS 173, CS 174, CS 180, CS 180H, CS 180L, CS 185A, CS 185B, CS 185C, MATH 142, MATH 171, MATH 177, MATH 178, MATH 179, MATH 203	
Total Units Required121

*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 coursework, 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 coursework 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. 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 Support6-8
MATH 030, MATH 030P or MATH 071 (3-5); MATH 042 (3)	
Lower Division Computer Science8
CS 046A and CS 046B	
Upper Division Electives6
Up to 3 units of CS 185A, CS 185B, and CS 185C can be used.	
Complete six units from: CS 116A, CS 116B, CS 122, CS 123A, CS 123B, CS 130, CS 134, CS 143C, CS 143M, 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 172A, CS 172B, CS 173, CS 174, CS 180, CS 180H, CS 180L, CS 185A, CS 185B, CS 185C, MATH 142, MATH 171, MATH 177, MATH 178, MATH 179, MATH 203	

Total Units Required20-22

At least 12 of units of the above must be distinct from the student's major. At least three units of upper division coursework 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

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 Studies and Research website at www.sjsu.edu/gradstudies.

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 3 units of CS 180, and/or CS 280.

Semester Units

Core Courses	9
<i>Select one course from each of the following core groups.</i>		
CS 252, CS 254 or CS 255 (3); CS 247 or CS 258 (3); CS 249 or CS 257 (3)		
Option Courses		
Complete three courses from: CS 216, CS 235, CS 240, CS 243A, CS 243B, CS 247, CS 249, CS 251A, CS 251B, CS 252, CS 253, CS 254, CS 255, CS 256, CS 257, CS 258, CS 262, CS 265, CS 267, CS 274, CS 286, MATH 271A, MATH 271B, MATH 279A		
Elective Courses	6
Thesis or Writing Project	6
<i>Select one of the following two options.</i>		
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.

Courses

COMPUTER SCIENCE

LOWER DIVISION

CS 023. Introduction to Computer Science for Biologists and Chemists

Introduction to computer science topics needed to enter the field of bioinformatics. Intended for Biology and Chemistry students. Simple C and Perl programming in a Unix environment and basic database access techniques will be covered. No prior knowledge of computer programming required.

Prerequisite: BIOL 5 or CHEM 55; or instructor consent.

3 units

CS 025. The Digital World and Society

See CMPE 025.

3 units

CS 040. Introduction to Computers

For students with little or no computer experience. Topics include: history of computing, user interfaces, computer applications, programming, hardware and software, computer networks.

3 units

CS 046A. Introduction to Programming

Basic skills and concepts of computer programming in an object-oriented approach using Java. Classes, methods and argument passing, control structures, iteration. Basic graphical user interface programming. Problem solving, class discovery and stepwise refinement. Programming and documentation style. Weekly hands-on activity.

Prerequisite: Eligibility for MATH 30 or MATH 30P or instructor consent.

4 units

CS 046B. Introduction to Data Structures

Stacks and queues, recursion, lists, dynamic arrays, binary search trees. Iteration over collections. Hashing. Searching, elementary sorting. Big-O notation. Standard collection classes. Weekly hands-on activity.

Prerequisite: Knowledge of Java equivalent to that obtained by completing CS 46A or CS 49J (with grade of "C-" or better).

Pre/Corequisite: MATH 42.

4 units

CS 047. Introduction to Computer Systems

Instruction sets, assembly language and assemblers, linkers and loaders, data representation and manipulation, interrupts, pointers, function calls, and argument passing.

Pre/Corequisite: CS 46B (with a grade of "C-" or better) or instructor consent.

3 units

CS 049C. Programming in C

Beginning course in the C language.

Prerequisite: Previous programming experience and completion of math GE.

3 units

CS 049J. Programming in Java

Introduction to the Java programming language and libraries. Topics include fundamental data types and control structures, object-oriented programming, string processing, input/output, and error handling. Use of Java libraries for mathematics, graphics, collections, and for user interfaces.

Prerequisite: Previous programming experience in language other than Java.

3 units

CS 050. Scientific Computing I

See METR 050.

2 units

CS 072. Unix and Unix Utilities

A practical introduction to Unix and Unix utilities. Topics include use of the major utilities, Unix file structure, interaction with the shell, graphical user interfaces and networking commands. This course is the first in the Unix Systems Administration Certificate Program.

Prerequisite: CS 46A (with a grade of "C-" or better) or equivalent.

3 units

CS 085A. Practical Computing Topics

Computing topics of current interest in industrial practice. Emphasis on effective use and integration of software/hardware. Different topics may be offered at different times in a short-course lecture/lab format. Different versions of this course may be repeated for credit.

Prerequisite: Varies with topic.

Repeatable for credit

Credit / No Credit

1 unit

CS 085B. Practical Computing Topics

Computing topics of current interest in industrial practice. Emphasis on effective use and integration of software/hardware. Different topics may be offered at different times in a short-course lecture/lab format. Different versions of this course may be repeated for credit.

Prerequisite: Varies with topic.

Repeatable for credit

2 units

CS 085C. Practical Computing Topics

Computing topics of current interest in industrial practice. Emphasis on effective use and integration of software/hardware. Different topics may be offered at different times in a short-course lecture/lab format and may be repeated for credit.

Prerequisite: Varies with topic.

Repeatable for credit

3 units

UPPER DIVISION

CS 100W. Technical Writing Workshop

Advanced writing through preparation of technical reports and presentations. Improving skills for writing subject-related reports, project proposals and personal resumes through practice and evaluation. Course assignments will be related to issues concerning careers in mathematics and mathematics education.

Prerequisite: ENGL 1B (with a grade of "C" or better); Completion of core GE; satisfaction of Writing Skills Test; upper division standing.

ABC/No Credit

GE: Z

3 units

CS 110L. Advanced Computing Laboratory

Programming projects demonstrating data structures, modular design, input/output handling, debugging, testing, error trapping, documentation. Required for use of department labs.

Corequisite: Any CS course and instructor consent.

Lab 3 hours.

Repeatable for credit

Credit / No Credit

1 unit

CS 116A. Introduction to Computer Graphics

Vector geometry, geometric transformations and the graphics pipeline. Basic raster graphics algorithms for drawing discrete lines, clipping, visible surface determination and shading. Display of curves and surfaces. Graphics data structures.

Prerequisite: MATH 32, MATH 129A, CS 146 (with a grade of "C-" or better in each) and previous programming experience in C/C++, or instructor consent.

3 units

CS 116B. Computer Graphics Algorithms

In-depth discussion of algorithms and techniques used in computer graphics and their implementation. Topics include: animation, fractals, anti-aliasing, fill algorithms, visible surface algorithms, color and shading, ray tracing, radiosity and texture maps. Substantial programming required.

Prerequisite: CS 116A (with a grade of "C-" or better) or instructor consent.

Offered only occasionally.

3 units

CS 120A. Laboratory Electronics for Scientists I

See PHYS 120A.

3 units

CS 120I. Laboratory Electronics for Scientists II: Instrumentation

See PHYS 120I.

3 units

CS 122. Advanced Programming with Perl

Introduction to the Perl programming language, with emphasis on data manipulation, file processing, and database access. Real-life applications in various fields such as system administration, networking, and bioinformatics.

Prerequisite: CS 146 (with a grade of "C-" or better) or instructor consent.

3 units

CS 123A. Bioinformatics I

Introduction to the main public domain tools, databases and methods in bioinformatics. Analysis of algorithms behind the most successful tools, such as the local and global sequence alignment packages, and the underlying methods used in fragment assembly packages. Solution of complex biological questions requiring modification of standard code.

Prerequisite: CS 23, and BIOL 115 or CHEM 130A; or CS 46B and a molecular biology course.

3 units

CS 123B. Bioinformatics II

Computational methods used for searching, classifying, analyzing, and modeling protein sequences. Tools for analyzing DNA and RNA sequences. More advanced topics, such as genetic algorithms and simulated annealing, which can be used to address folding problems.

Prerequisite: CS 123A.

3 units

CS 130. Windows Programming

Introduction to the concepts and techniques of windows programming using the .NET Foundation Class Library (FCL) and C#. Topics include graphics programming, graphical user interface programming, current technology for code reuse (components), and programmatic access to web services.

Prerequisite: CS 46B (with a grade of "C-" or better), or instructor consent.

3 units

CS 134. Computer Game Design and Programming

Architectures and object-oriented patterns for computer game design. Animation, simulation, user interfaces, graphics, and intelligent behaviors. Team projects using an existing game engine framework.

Prerequisite: CS 130 and CS 151 (with a grade of "C-" or better in each); or instructor consent.

3 units

CS 143C. Numerical Analysis and Scientific Computing

See MATH 143C.

3 units

CS 143M. Numerical Analysis and Scientific Computing

See MATH 143M.

3 units

CS 146. Data Structures and Algorithms

Implementations of advanced tree structures, priority queues, heaps, directed and undirected graphs. Advanced searching and sorting (radix sort, heapsort, mergesort, and quicksort). Design and analysis of data structures and algorithms. Divide-and-conquer, greedy, and dynamic programming algorithm design techniques.

Prerequisite: MATH 31, MATH 42, CS 49J (or equivalent knowledge of Java), and CS 46B (with a grade of "C-" or better in each); or instructor consent.

3 units

CS 147. Computer Architecture

Introduction to the basic concepts of computer hardware structure and design, including processors and arithmetic logic units, pipelining, and memory hierarchy.

Prerequisite: CS 47 (with a grade of "C-" or better) or instructor consent.

3 units

CS 149. Operating Systems

Fundamentals: Contiguous and non-contiguous memory management; processor scheduling and interrupts; concurrent, mutually exclusive, synchronized and deadlocked processes; files. Substantial programming project required.

Prerequisite: CS 146 or SE 146 (with a grade of "C-" or better), and CS 147 or SE 120 or CMPE 120 (with a grade of "C-" or better).

3 units

CS 151. Object-Oriented Design

Design of classes and interfaces. Value and reference semantics. Object-oriented design methodologies and notations. Design patterns. Reflection and serialization. Exception handling. Graphical user interface programming. Frameworks and components. Multithreading. Required team-based programming assignments.

Prerequisite: MATH 42, CS 46B, and CS 49J (or equivalent knowledge of Java) (with a grade of "C-" or better in each) or instructor consent.

3 units

CS 152. Programming Paradigms

Programming language syntax and semantics. Data types and type checking. Scope, bindings, and environments. Functional and logic programming paradigms, and comparison to other paradigms. Extensive coverage of a functional language.

Prerequisite: CS 151 or CMPE 135 or SE 135 (with a grade of "C-" or better in each), or instructor consent.

3 units

CS 153. Concepts of Compiler Design

Theoretical aspects of compiler design, including parsing context free languages, lexical analysis, translation specification and machine-independent code generation. Programming projects to demonstrate design topics.

Prerequisite: CS 47 and CS 146 and CS 154 (with a grade of "C-" or better in each) or instructor consent. 3 units

CS 154. Formal Languages and Computability

Finite automata, context-free languages, Turing machines, computability.

Prerequisite: MATH 42 and CS 46B (with a grade of "C-" or better in each) or instructor consent. 3 units

CS 155. Introduction to the Design and Analysis of Algorithms

Algorithm design techniques: dynamic programming, greedy algorithms, Euclidean and extended Euclidean algorithms, Discrete and Fast Fourier transforms. Analysis of algorithms, intractable problems and NP-completeness. Additional topics selected from: selection algorithms and adversary arguments, approximation algorithms, parallel algorithms, and randomized algorithms.

Prerequisite: CS 146 (with a grade of "C-" or better) or instructor consent.

3 units

CS 156. Introduction to Artificial Intelligence

Basic concepts and techniques of artificial intelligence: problem solving, search, deduction, intelligent agents, knowledge representation. Topics chosen from logic programming, game playing, planning, machine learning, natural language, neural nets, robotics.

Prerequisite: CS 146 and CS 151 (with a grade of "C-" or better in each); or instructor consent.

3 units

CS 157A. Introduction to Database Management Systems

Current, classical database systems. Entity-relationship and enhanced entity models. Relational model, algebra, calculus. Current, emerging SQL standard. Embedded, Dynamic SQL. Application perspective on transactions and security. Interactive and programmatic interfaces to database systems. Application programming project using commercial database system.

Prerequisite: CS 146 (with a grade of "C-" or better) or instructor consent.

3 units

CS 157B. Database Management Systems II

Survey course. Object-oriented data model, definition language, query language. Object relational database systems. Database trends like active, temporal, multimedia, deductive databases. Web database topics, namely, architectures, introduction to interface languages. Team projects.

Prerequisite: CS 157A (with a grade of "C-" or better) or instructor consent.

3 units

CS 158A. Computer Networks

Introduction to computer networks, network layered architectures, performance and queuing characteristics of network models. Labwork using networks.

Prerequisite: CS 146 and CS 147 (with grades of "C-" or better in each) or instructor consent.

3 units

CS 158B. Computer Network Management: Principles and Technology

The course will cover principles and main functions of computer network management and two major network management systems: the Internet SNMP (and SNMP v2) and the OSI CMIP; and management of LAN, WAN, interfaces, hosts, agents and applications.

Prerequisite: CS 158A or CMPE 148 (with a grade of "C-" or better).

3 units

CS 159. Introduction to Parallel Processing

Major parallel architectures: shared memory, distributed memory, SIMD, MIMD. Parallel algorithms: techniques for scientific applications, measures of performance. Parallel programming: principles and implementations in various languages. Assignments on available parallel and vector computers.

Prerequisite: CS 146 (with a grade of "C-" or better) or instructor consent.

3 units

CS 160. Software Engineering

Software engineering principles, requirements elicitation and analysis, design, configuration management, quality control, project planning, social and ethical issues. Required team-based software development, including written requirements specification and design documentation, oral presentation, and tool use.

Prerequisite: CS 146, CS 151 (with a grade of "C-" or better in each); CS 100W (with a grade of "C" or better) or instructor consent.

3 units

CS 161. Software Project

A substantial project based on material from an advanced area of computer science. Includes lectures on the project topic and on the testing and maintenance of software systems. At least 50% of the course grade to be based on the project.

Prerequisites: CS 160 (with a grade of "C-" or better) or instructor consent.

3 units

CS 166. Information Security

Fundamental security topics including cryptography, protocols, passwords, access control, software security, and network security. Additional topics selected from multilevel security, biometrics, tamper-resistant hardware, information warfare, e-commerce, system evaluation and assurance, and intrusion detection.

Prerequisite: CS 146 (with a grade of "C-" or better) and either CS 47 or CMPE 120 (with a grade of "C-" or better), or instructor consent.

3 units

CS 172A. Fundamentals of Unix System Administration

Basic tasks for Unix systems administration including system installation, administration of user accounts, file system installation and maintenance, backups, process management and introduction to shell scripting. Second course in Unix Systems Administration Certificate Program.

Prerequisite: CS 72 (with a grade of "C-" or better).

3 units

CS 172B. Unix System Administration

Topics include external device configuration, introduction to Perl programming, file and disk management, log files, script writing for common tasks, troubleshooting, TCP/IP and routing fundamentals, NFS and security. Third course in Unix Systems Administration Certificate program.

Prerequisite: CS 172A (with a grade of "C-" or better).

3 units

CS 173. Advanced Unix System Administration

System performance management including tuning to enhance performance. Network administration including NIS, DNS, email. Disk management including RAID. Large scale administration including software distribution and routine task automation. Required for Unix Systems Administration Certificate Level 2.

Prerequisite: CS 172B (with a grade of "C-" or better).

3 units

CS 174. Server-side Web Programming

Development and deployment of multi-tier web-based applications. Introduction to HTML, XML, enterprise design patterns, web services and database access.

Prerequisite: CS 46B (with a grade of "C-" or better).

3 units

CS 180. Individual Studies

Individual study in a specific field.

Prerequisite: Department chair consent.

Repeatable for credit

Credit / No Credit

1-3 units

CS 180H. Individual Studies for Honors

Senior project on advanced topics in computer science as determined by the instructor.

Written paper or oral presentation of the project required. Intended for students graduating with departmental honors.

Prerequisite: At least junior standing as computer science major. GPA of 3.5 or higher in the major and department chair consent.

Credit / No Credit

3 units

CS 180I. Internship Project

Work on an approved project at an industrial site. Meet once per week on campus. A written and oral report must be given at the end of the semester to demonstrate the acquisition of skills identified as goals prior to the start of the assignment.

Prerequisite: CS 146 (with a grade of "C-" or better), selection by a company, and instructor consent.

3 units

CS 185A. Advanced Practical Computing Topics

Computing topics of current interest in industrial practice. Emphasis on effective use and integration of software/hardware. Different topics may be offered at different times in a short-course lecture/lab format and may be repeated for credit..

Prerequisite: Varies with topic.

Repeatable for credit

Credit / No Credit

1 unit

CS 185B. Advanced Practical Computing topics

Computing topics of current interest in industrial practice. Emphasis on effective use and integration of software/hardware. Different topics may be offered at different times in a short-course lecture/lab format and may be repeated for credit.

Prerequisite: Varies with topic.

Repeatable for credit

2 units

CS 185C. Advanced Practical Computing Topics

Computing topics of current interest in industrial practice. Emphasis on effective use and integration of software/hardware. Different topics may be offered at different times in a short-course lecture/lab format and may be repeated for credit.

Prerequisite: Varies with topic.

Repeatable for credit

3 units

GRADUATE

CS 200W. Graduate Technical Writing

Graduate technical writing workshop to develop advanced communication skills that will meet the professional needs of computer scientists, along with research methodologies and proper documentation for the master's thesis project. (This course does NOT satisfy the undergraduate GE Area Z requirement.)

Prerequisite: Graduate standing.

ABC/No Credit

3 units

CS 216. Geometric Modeling

Representation of curves and surfaces, basic differential geometry, solid modeling fundamentals, implementation considerations.

Prerequisite: CS 116A or instructor consent.

3 units

CS 223. Bioinformatics

The course investigates the main algorithms for solving computational problems in bioinformatics. Methods will include Hidden Markov Models for gene prediction and protein profiling, and Genetic Algorithms for biological sequence analysis and structure prediction. Students will be given programming projects.

Prerequisite: CS 123A or CS 155.

3 units

CS 235. User Interface Design

Human-computer interaction principles. Direct manipulation, focus plus context, interaction history; interfaces for websites and website collections; usability testing; role of metaphors; case studies; advanced topics include information visualization, interfaces for collaboration, intelligent interfaces, and software agents.

Prerequisite: CS 130 or CS 116A, or instructor consent.

3 units

CS 240. Advanced Software Project

A semester-long project, assigned by the instructor. Class discussion of project issues, including software design methodologies, applicable algorithms/data structures and system interfaces.

Prerequisite: Classified standing in MSCS program, and either CS 100W or concurrent enrollment in CS 100W.

3 units

CS 243A. Advanced Numerical Analysis

See MATH 243A.

3 units

CS 243B. Advanced Topics in Numerical Analysis

See MATH 243B.

3 units

CS 247. Advanced Computer Architecture

Advanced topics in vector architectures, including: pipelined architectures, dataflow computers, VLSI architectures, butterfly connections; bus and memory architectures; cache structures; hardware implementations of algorithms.

Prerequisite: CS 147 and CS 149 or instructor consent.
3 units

CS 249. Distributed Computing

Current issues in operating systems, including multiprocessor systems and distributed computing, networks, security and performance. Case studies of current operating systems.

Prerequisite: CS 149 or instructor consent.
3 units

CS 251A. Object-Oriented Analysis

Emphasizes the important concepts, activities, and artifacts of the analysis phase of object-oriented software development. CASE tools and UML are used to model application domain data, workflows, system requirements, deployment, and life cycles.

Prerequisite: CS 160 or instructor consent.
3 units

CS 251B. Object-Oriented Design

Course covers important concepts, activities, and artifacts of the design phase of object-oriented software development. Topics include design metrics, design patterns, refactoring, frameworks, and testing.

Prerequisite: CS 160 or instructor consent.
3 units

CS 252. Advanced Programming Language Principles

Language design and paradigms, including concepts underlying functional, logic, object-oriented and parallel paradigms. Theoretical foundations, including lambda calculus, denotational and axiomatic semantics. Proofs of program correctness. Programming projects emphasizing different aspects of language design.

Prerequisite: CS 152 or instructor consent.
3 units

CS 253. Advanced Compiler Design

Review of attribute analysis and static semantic evaluation. Runtime environments and code generation. Basic blocks and flow graphs. Register allocation and storage classes. Common subexpression elimination and constant propagation. Loop optimizations. Global data flow analysis. Completion of a code optimization project.

Prerequisite: CS 153 or instructor consent.
3 units

CS 254. Theory of Computation

Models of computation; decidability; complexity measures; hierarchies; P, NP and other complexity classes; intractable problems.

Prerequisite: CS 154 or instructor consent.
3 units

CS 255. Design and Analysis of Algorithms

Randomized algorithms. Parallel algorithms. Distributed algorithms. NP-completeness of particular problems. Approximation algorithms.

Prerequisite: CS 155 or instructor consent.
3 units

CS 256. Topics in Artificial Intelligence

Introduction to topics in artificial intelligence such as problem solving methods, game playing, understanding natural languages, pattern recognition, computer vision and the general problem of representing knowledge. Students will be expected to use LISP.

Prerequisite: CS 156 or instructor consent.
3 units

CS 257. Database System Principles

Design management and performance issues on: file organization and access methods, buffer management and storage management. Query processing and query optimization, transaction management, recovery, and concurrency control techniques. Reliability, protection and integrity techniques. Extensive programming project.

Prerequisite: CS 157B or instructor consent.
3 units

CS 258. Computer Communication Systems

Design and analysis of message-switched networks of terminals and computers. Topics include topological design, line capacity allocation, routing and flow control algorithms, transmission protocols and teleconferencing applications.

Prerequisite: CS 158A or instructor consent.
3 units

CS 262. Randomized Algorithms and Applications

Design and analysis of algorithms which incorporate randomness in their design. Applications will be given in several of the following areas: data structures, pattern matching, cryptography, parallel computing, distributed computing, and interactive proof systems.

Prerequisite: CS 154 or CS 155.
3 units

CS 265. Cryptography and Computer Security

Security mechanisms for protecting information in computer systems and networks. Includes cryptography and its applications to security services in distributed systems, mathematics of cryptography, access control, protection models, security policies, design of secure systems, firewalls, and intrusion detection.

Prerequisite: CS 149 or instructor consent.
3 units

CS 267. Topics in Database Systems

Advanced topics in the area of database and information systems. Content differs in each offering. Possible topics include though not restricted to: Data Mining, Distributed Databases and Transaction Processing.

Prerequisite: CS 157B.
Repeatable for credit
3 units

CS 274. Topics in XML and Web Intelligence

XML: DTD, Schema, Namespace, XSLT, XPath, Xquery, Encryption, Signature in XML, applications in vertical industries; Semantic Web; RDF, RDFS, Ontology, Inferences; Web services, relevant tools for search, inference, data conversion in XML, Semantic web applications.

Prerequisites: CS 160 or instructor consent.
3 units

CS 280. Graduate Individual Studies

Individual study in specific field.

Prerequisite: Department chair consent.
Repeatable for credit
Credit / No Credit
1-3 units

CS 286. Advanced Topics in Computer Science

Selected topics in computer science. Topics vary each semester and may be repeated for a maximum of 6 units.

Prerequisite: Suitable upper division background in mathematics and computer science as set by instructor.
Repeatable for credit
3 units

CS 297. Preparation for Writing Project or Thesis

Supervised individual research and project work to prepare for a master's writing project or thesis.

Prerequisite: Department chair consent and either CS 100W or concurrent enrollment in CS 100W.
Credit / No Credit
3 units

CS 298. Master's Writing Project

Prerequisite: CS 297 or CS 240, and department chair consent and admission to candidacy for the MS degree.
Repeatable for credit
Credit / No Credit
3 units

CS 299. Master's Thesis

Prerequisite: CS 297 and department chair consent and admission to candidacy for the MS degree.
Repeatable for credit
Credit/No Credit/Report in Progress
3 units

Creative Arts

College of Humanities and the Arts

Clark Hall 419
408-924-4481
creative@email.sjsu.edu

Professors

Brian W. Holmes
Gabriele L. Rico
Jennifer Rycenga
Karl E. Toepfer
Ethel Pitts Walker
Yen Lu Wong

Assistant Professors

Shannon Rose Riley

Curricula

- BA, Creative Arts
- BA, Creative Arts, Preparation for Teaching
- Minor, Creative Arts

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; 15 units in history/theory courses; 15 units related upper division units from two departments; and 12 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 the 1960's, this is a unique and well-established program.

BA – Creative Arts

Advisor: Johanna Movassat

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

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: School of Art and Design, School of Music and Dance, TVRFT Department, English and Comparative Literature Department, and others approved by the CAP Advisor

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 098, TA 010

Upper Division Courses 15

Fifteen unit program of study of upper division courses in two or more arts disciplines selected primarily from the following: School of Art and Design, School of Music and Dance, TVRFT Department, English and Comparative Literature Department, Foreign Languages Department (literature only) and/or additional Creative Arts courses (proposed to and approved by the CAP Advisor)

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 15

CA 175 and CA 176; Complete nine units from: CA 172, CA 173, CA 178 (may be repeated), CA 180, CA 190

Electives 28

Total Units Required 120

BA – Creative Arts, Preparation for Teaching

Advisor: Johanna Movassat

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 93-99

Reading, Language and Literature 18

ENGL 001A, ENGL 001B and ENGL 112A (9); ENGL 103 or LLD 107 (3); LLD 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); SOCS 137, SOCS 138 and SOCS 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 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)

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 131. 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 7-10

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 coursework 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, TVRTF Department, English and Comparative Literature Department, Foreign Languages Department (literature only).....	6
CA 175 (3); CA 176 (3); CA 177 (for prospective teachers), CA 172, CA 173 or CA 178 (3).....	9
Total Units Required	18

Courses**CREATIVE ARTS****UPPER DIVISION****CA 100W. Written Communication II**

Examination and practice of professional writing for the arts.

Prerequisite: ENGL 1B (with a grade of C or better); Completion of core GE, satisfaction of Writing Skills Test and upper division standing.
ABC/No Credit
GE: Z
3 units

CA 121. Music and Religious Experience

See RELS 121.

3 units

CA 134. Religion Film & Media

See RELS 134.

3 units

CA 139. Multicultural Art Education with Studio Experience

See ART 139.

3 units

CA 148. The Art of Movement

See TA 148.

3 units

CA 150. Field Experience in the Arts

See ARED 150.

3 units

CA 172. The Arts in U.S. Society

Study of American arts and artists in their aesthetic, social, and political contexts, focusing on 20th and 21st centuries. Arts examined include architecture, poetry, music, visual arts, dance, theatre, performance art, and fiction. Special emphasis on issues of cultural diversity.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.
GE: S
3 units

CA 173. Thinking About Contemporary World Arts

An interdisciplinary course on contemporary arts and culture which investigates connections between arts disciplines and world cultures. The course uses critical and creative thinking as the lens to focus on issues in the arts, especially personal and cultural identities.

Prerequisite: Completion of core GE, satisfaction of Writing Skills test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.
GE: V
3 units

CA 175. Seminar in Creative Process

An exploration of the Creative Process as it is reflected in producing cross-disciplinary works in the arts. Artistic productions will reflect their multi-trans-cultural context.

Prerequisite: Upper division standing and completion of 15 units in the arts.
Repeatable for credit
3 units

CA 176. Creativity and Creative Leadership

A course focusing on mastering current theories about creativity, adapting theoretical knowledge for an individual/personal strategy, and embodying both the knowledge and strategy in a collaborative project.

Prerequisite: Instructor consent.
3 units

CA 177. Interdisciplinary Arts for Teaching

Creativity in teaching and learning-a course designed for prospective teachers; connections between the various arts disciplines, integrating other core subjects taught in California's classrooms.

3 units

CA 178. Creative Arts Seminar

In-depth study of related artists/thinkers and their works using a thematic or period approach across disciplines. Content changes each semester.

Prerequisite: Upper division standing.
Repeatable for credit
3 units

CA 180. Individual Studies

Individual work on special topics, by arrangement.

Prerequisite: Coordinator approval.
Mixed grading.
Repeatable for credit
Mixed Grading
1-4 units

CA 190. Field Work/Internship

Pre-professional experience in arts management/program design/implementation in a public setting.

Prerequisite: Coordinator approval.
Repeatable for credit
Credit / No Credit
1-3 units

Economics

College of Social Sciences

Dudley Moorhead Hall 147
408-924-5400

Professors

Doris Cheng
Rodolfo A. Gonzalez
Douglas F. Greer
Tom S. Means, Director Economic Education Development
Lydia Ortega, Chair
J. Michael Pogodzinski
Yeung-Nan Shieh

Associate Professors

Edward J. Lopez
Edward Stringham

Assistant Professors

Colleen Berndt
Jeffrey Hummel

Curricula

- BA, Economics
- BS, Economics
- Minor, Economics
- MA, Economics
- MA, Economics,
Concentration in Applied Economics

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

Choose four courses from at least two of:
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".
MATH 070 (3); MATH 030 or MATH 071 (3)

Requirements for the Major 43

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

MA – Economics**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

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 Studies and Research website at www.sjsu.edu/gradstudies.

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

Electives: Approved 100- or 200-level courses 12

ECON 299 4

Plan B (without Thesis)	31
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Core courses: ECON 104, ECON 201, ECON 205A and ECON 205B 12

Additional core course: ECON 202 or ECON 235 3

Electives: Approved 100- or 200-level courses 15

ECON 298E 1

Total Units Required	31
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**MA – Economics,
Concentration in Applied Economics**

	Semester Units
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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
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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 Studies and Research website at www.sjsu.edu/gradstudies.

Courses**ECONOMICS****LOWER DIVISION****ECON 001A. Principles of Economics: Macroeconomics**

Determination of economic aggregates such as total output, total employment, the price level and the rate of economic growth.

May be taken concurrently or prior to ECON 1B.

CAN ECON 2

4 units

ECON 001B. Principles of Economics: Microeconomics

Allocation of resources and distribution of income as affected by the workings of the price system and by government policies.

May be taken concurrently or prior to Econ 1A.

CAN ECON 4

GE: D1

4 units

ECON 002A. Principles of Macroeconomics Online Lab

Self-paced, online lab guides students through practice and graded problem sets of key macroeconomics tools and concepts.

Credit / No Credit

1 unit

ECON 002B. Principles of Microeconomics Online Lab

Self-paced on line lab guides students through practice and graded problem sets of key microeconomics tools and concepts.

Credit / No Credit

1 unit

ECON 003. Economic Statistics

Elementary statistical analysis of economic data, probability theory, probability distributions, sampling, sampling distributions, estimation, hypothesis testing, simple linear regression, correlation and index numbers.

Prerequisite: ECON 1A, ECON 1B and MATH 70.

Lecture 3 hours/lab 2 hours.

4 units

UPPER DIVISION**ECON 100W. Writing Workshop: Economic Reports**

Writing skills appropriate to majors in economics of lucid expression in essays, reports and other types of communication.

Prerequisite: ENGL 1B (with a grade of C or better); Completion of core GE, satisfaction of Writing Skills Test and upper division standing.

ABC/No Credit

GE: Z

3 units

ECON 101. Microeconomic Analysis

Consumer behavior determining demands for goods and services. Theory of the firm including theories of production and cost. Theory of distribution to production factors.

Prerequisite: ECON 1B.

3 units

ECON 102. Macroeconomic Analysis

Theory of aggregate demand and related topics: national income accounting, employment and inflation, monetary and fiscal policies, economic stability, growth and balance of payments equilibrium.

Prerequisite: ECON 1A.

3 units

ECON 103. Introduction to Econometrics

Use of econometric methods in analyzing economic data. Simple and multiple regression. Problems of autocorrelation multicollinearity and heteroskedasticity.

Prerequisite: ECON 3.

Lecture 3 hours/lab 2 hours.

4 units

ECON 104. Mathematical Methods for Economics

Applications of linear algebra and differential calculus to economic analysis. Topics include market equilibrium, properties of production functions, multipliers, optimization methods, comparative statics analysis.

Prerequisite: ECON 1A, ECON 1B and MATH 71.

3 units

ECON 106. Managerial Economics

Applications of economic analysis to practical problems in the private and public sector. Demand and cost analysis, market structure, statistical estimation and forecasting; case studies.

Prerequisite: ECON 1B.

3 units

ECON 107. Introduction to Environmental Economics and Policy

See ENVS 107.

3 units

ECON 108. Topics in Cost-Benefit Analysis

Theory and practice of cost-benefit analysis applied to various topics including public projects and environment. Welfare foundations of CBA, valuation of goods (such as clean air, wilderness, and sports arenas), discounting future values and cost.

Prerequisite: ECON 1B or instructor consent.

3 units

ECON 109. Analysis of Economic Issues for Teachers

Economic analysis of such topics as unemployment, inflation, poverty, pollution, education and international trade will be covered within the context of K-12 education.

Prerequisite: Upper division standing.

Not acceptable for Economics majors, except double majors; acceptable for Economics minors.
3 units

ECON 110. Economic History of Europe

Historical setting of economic institutions, problems, theories and policies traced from antiquity, Greece, Rome and the Middle Ages to the early twentieth century.

Prerequisite: Upper division standing or instructor consent.

Offered summer and winter sessions and occasionally during the academic year.
3 units

ECON 111. Economic History of the U.S. and Canada

Economic analysis of U.S. and Canadian history to the mid-20th century and its application to understanding the causes, patterns and consequences of economic development.

Prerequisite: Upper division standing or instructor consent.

Offered summer and winter sessions and occasionally during the academic year.
3 units

ECON 112. Economic Development

Theories of development and underdevelopment. Problems of initiating and sustaining growth. Relations between developed and underdeveloped regions. Economic reform and change in the underdeveloped world.

Prerequisite: ECON 1A and ECON 1B.
3 units

ECON 117. National Economies: Policies and Performance

Major economies of the world (U.S., Japan, Germany, Russia, China, France) and selected other economies of Asia, Latin America, Africa and Europe. Institutions, fiscal policy, monetary policy, industrial organization and planning.

Prerequisite: Upper division standing or instructor consent.
3 units

ECON 121. Industrial Organization

Microeconomic theory applied to pricing of products by seller having different market structures such as competition, imperfect competition, monopoly, public utility regulation or government pricing.

Prerequisite: ECON 1B.
3 units

ECON 132. Public Finance

Microeconomics of the public sector. Role of government in market systems. Cost-benefit analysis, public choice theory, taxation, fiscal federalism. State and local government sector.

Prerequisite: ECON 1B.
3 units

ECON 135. Money and Banking

Monetary institutions and theory, central banking, Federal Reserve System, interest rates, foreign exchange, price level theory, flow of funds, policy relative to private, government and international finance.

Prerequisite: ECON 1A.
3 units

ECON 136. International Economics

International trade theory, customs union, tariffs, quota policies. International monetary system balance of payments problems, foreign exchange markets.

Prerequisite: ECON 1A and ECON 1B.
3 units

ECON 137. California in Historical and Social Scientific Perspectives

See SOCS 137.

3 units

ECON 137A. Fundamentals of Corporate Finance

Net present value criterion for investment and financial decisions, portfolio analysis, capital assets pricing model, information efficiency of security markets, influence of dividend policy on stock prices and optimality of financial structure of corporations.

Prerequisite: ECON 1B.
3 units

ECON 137B. Topics in Corporate Finance

Analytical coverage of topics such as role of leverage, valuation of options (warrants, puts, calls and convertibles), valuation of risky debt, capital budgeting, mergers, financial planning and international aspects of corporate finance.

Prerequisite: ECON 137A or instructor consent.
3 units

ECON 138. Business and Economic Forecasting

Use of regression techniques to forecast movements in economic conditions having effects on business firms and governments.

Prerequisite: ECON 1A, ECON 1B and a semester of statistics.
3 units

ECON 139. Principles of Investments

Stocks, bonds, money market instruments, options, futures and real estate. Institutions, markets and theory. Speculation, present value theory, yields, term structure, taxes, portfolios and insurance.

Prerequisite: ECON 1A and ECON 1B.
3 units

ECON 140. Economics of Race and Gender

Race and gender in the American economy. Economic origins of race and sex discrimination as they relate to markets in labor, land (housing) and capital.

Prerequisite: ECON 1B.
Offered summer and winter sessions and occasionally during the academic year.
3 units

ECON 141. Law and Economics

Effects on resource use of existing and proposed laws concerning contracts, tort liability, crime, water resources, antitrust, real property, the environment and corporations.

Prerequisite: Upper division standing or instructor consent.
3 units

ECON 151. Labor Economics

Development of labor institutions and markets, public regulation of unions, economics of collective bargaining. Theories of wages, employment and labor income. Hours of work and automation.

Prerequisite: ECON 1A or ECON 1B.
Offered occasionally during the academic year.
3 units

ECON 158. The Political Economy of Privatization

Course will investigate privatization of economic activities, with examples from the U.S. and rest of the world. Different types of privatization are analyzed. Effects of privatization on efficiency, wages and quality of services also studied.

Prerequisite: ECON 1A and ECON 1B or instructor consent.
Offered summer and winter sessions and occasionally during the academic year.
3 units

ECON 160. Public Regulation of Business

Economic criteria of public regulation and control of private business with emphasis on the problems of public policy.

Prerequisite: ECON 1B.
Offered summer and winter sessions and occasionally during the academic year.
3 units

ECON 165. Regional Economics

The economic structure of a region, including the economic base and its relation to industries serving the local market, the relationships among the subregions and the location of industry.

Prerequisite: ECON 1A or ECON 1B or instructor consent.
3 units

ECON 166. Urban Economics

Analysis of major economic problems of metropolitan areas: taxation, financing of urban services, transportation, residential and industrial development, local growth controls, zoning and housing.

Prerequisite: ECON 1B.
3 units

ECON 180. Individual Studies

Prerequisite: Instructor consent and department chair approval.

Repeatable for credit
Credit / No Credit
1-4 units

ECON 185. Applied Economics Internship

Supervised work with a private or public employer. Provides opportunity to gain experience in applied economics or in a discipline closely related to economics.

Prerequisite: Junior or senior standing and consent of internship coordinator.
Repeatable for credit
Credit / No Credit
3 units

ECON 190A. History of Economic Thought

The meaning and relevance of classical economic theory; origins of political economy; Adam Smith to J.S. Mill.

Prerequisite: Upper division standing or instructor consent.
3 units

ECON 193. Institutional Economics

This course covers the various approaches to institutions and their role in the economy. These include the traditional American institutionalism of Veblen, Commons and Galbraith, the new institutionalist and the neo institutionalist and Marxist schools of thought.

Offered summer and winter sessions and occasionally during the academic year.
3 units

ECON 195. Computer Applications in Economics

Covers the use of software which has the greatest applicability in economics; i.e., word processing, spreadsheets, databases, statistical processing of data, project presentations and web page creation. There is also a survey of other computer applications.

Prerequisite: ECON 1A and ECON 1B.
3 units

GRADUATE**ECON 200. Seminar in Law and Economics**

Examines economic effects of legal institutions and doctrines, existing and proposed, on managerial decision making. Evaluates the interactions between legal and economic principles using examples of escalating demands on private firms and public agencies presented by changing legal and quasi-legal structures.

Prerequisite: Previous education in economics and business law helpful, but not essential.
3 units

ECON 201. Seminar in Microeconomic Analysis

Advanced analysis of costs, pricing, revenue, market structures, economic efficiency, rates of wages, rent, interest, profits and allocation of resources; analytical models and economic equilibrium.

Prerequisite: ECON 101 and ECON 104.
3 units

ECON 202. Seminar in Macroeconomic Analysis

Aggregate analyses of inflation and unemployment (and of alternative fiscal and monetary policies) using general equilibrium and dynamic disequilibrium adjustment models of real output, labor, real capital and financial markets (both domestic and international).

Prerequisite: ECON 101, ECON 102 (or equivalents approved by the instructor, with grades of "B" or better).
3 units

ECON 203. Seminar in Econometric Methods

Elements of statistical inference (t, F and Chi-square tests); the classical regression model and simultaneous equations models; estimation and prediction; the use of lagged and dummy variables; problems of multicollinearity, heteroskedasticity, serial correlation of disturbances and errors in the variables.

Prerequisite: ECON 103B or instructor consent.
3 units

ECON 204. Seminar in Mathematical Economics

The use of mathematical techniques such as differential and integral calculus, linear algebra, topology, differential and difference equations, mathematical programming, optimal control theory and game theory to analyze economic models.

Prerequisite: ECON 104 (or equivalent).
Offered summer and winter sessions and occasionally during the academic year.
3 units

ECON 205A. Economic Decision Making (Quantitative Economic Analysis for Public Decision-Making)

The nature and use of techniques for estimating the impact of alternative courses of action. Emphasizes fiscal impact analysis, cost benefit analysis, input-output analysis and multiplier methods.

Prerequisite: ECON 101 and ECON 102, or instructor consent.
Usually offered in the Fall semester.
3 units

ECON 205B. Workshop in Policy Analysis

Survey of major areas of economic policy such as taxes, transportation, health, housing, environment, trade and education. Students prepare a written report on some topic of policy analysis and present the results to the class.

Prerequisite: ECON 205A or instructor consent.
Usually offered in the Spring semester.
Repeatable for credit
3 units

ECON 206. Managerial Economics

Aspects of microeconomic theory relevant to managerial decision-making: consumer demand theory, estimation and forecasting; production and cost theory and estimation; managerial decision-making under the competitive market structure; optimal pricing strategies; investment decisions and capital budgeting.

Prerequisite: ECON 1A, ECON 1B, ECON 101 or ECON 106; elementary statistics or instructor consent.

Usually offered once per year.

3 units

ECON 212. Seminar in Economic Development and Institutions

Advanced topics in development and under-development in world economy, growth theory, empirical data sources and analysis and use of quantitative methods in development planning.

Prerequisite: Instructor consent.

3 units

ECON 220. Computational Economics

The investigation and numerical analysis of complex economic models, starting with regional input-output models and linear programming and leading to Walras' general equilibrium theory and Scarf's computable general equilibrium models.

Prerequisite: ECON 201 or instructor consent.

Offered summer and winter sessions and occasionally during the academic year.

3 units

ECON 221. Industrial Organization

Analysis of the relations between industry structures, business conduct and economic performance under conditions of limited governmental interference. Appraises the role of competition and monopoly in the American economy. Stresses the role played by antitrust laws and regulatory commissions in the U.S. economy.

Prerequisite: Instructor consent.

3 units

ECON 232. Seminar in Public Finance

The public sector. Determination of objectives of the public sector; pricing and output in the public sector; taxes, their distribution and allocative effects; public expenditure theory; public debt theory and policy.

Prerequisite: Instructor consent.

3 units

ECON 235. Seminar in Monetary Theory and Policy

Concentration on the theoretical aspects of money and monetary policy. Early and modern theories of money demand; early Keynesian and Monetarist monetary analysis; expectations and dynamic monetary business cycles; monetary policy under the Keynesian, Monetarist and New Classical assumptions; open economy monetary theory.

Prerequisite: ECON 1A, ECON 102 and ECON 135, or instructor consent.

3 units

ECON 236. Seminar in International Trade and Finance

Advanced theory of international trade and finance and its application to current problems in international economics.

Prerequisite: Instructor consent.

Not offered on a regular basis.

3 units

ECON 237. Derivative Securities

Analysis of speculative markets and their role in the economy in evaluating information, providing forecasts and allowing the shifting of risk. Among markets considered are those for commodities, options (puts and calls) and interest rate and stock indices.

Prerequisite: ECON 137B or instructor consent.

Not offered on a regular basis.

3 units

ECON 250. Seminar in Labor Economics

Analysis of labor markets, utilizing economic theory and empirical techniques with applications to public policy. Topics include: investment in human capital; employee compensation issues; compensating wages; discrimination; unions; and public sector labor markets.

Prerequisite: Instructor consent.

Offered summer and winter sessions and occasionally during the academic year.

3 units

ECON 285. Applied Economics Internship

Supervised work with a private or public employer.

Prerequisite: Graduate standing and 3.0 GPA.

Credit / No Credit

3-6 units

ECON 298. Special Study

Advanced individual research projects.

Prerequisite: Instructor consent and department chair approval.

Repeatable for credit

Credit / No Credit

1-3 units

ECON 298E. Special Study Comprehensive Exam

Individual preparation for the comprehensive exam. Students must file for candidacy before enrolling. Approval of department chair, graduate advisor, or instructor is required. Satisfactory completion satisfies culminating experience requirement.

Credit / No Credit

1 unit

ECON 299. Master's Thesis or Project

Open only to approved candidates for the MA - Economics degree.

Description: Open only to approved candidates for the MA - Economics degree.

Repeatable for credit

Credit/No Credit/Report in Progress

1-6 units

Education – Communicative Disorders and Sciences

College of Education

Sweeney Hall 115
408-924-3688
408-924-3641 (Fax)
ellen.hoebeke@sjsu.edu

Professors

Henriette W. Langdon
June McCullough
Jean Novak

Associate Professors

Michael Kimbarow
Jean Neils-Strunjas

Assistant Professors

Wendy Quach

Curricula

- BA, Communicative Disorders and Sciences
- Minor, Speech Pathology
- MA, Education,
Concentration in Speech Pathology

The Master's degree in Speech Pathology is accredited by the American Speech-Language and Hearing Association through the year 2010. 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 2.87 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.

MA – Education, Concentration in Speech Pathology

Advisors: Dr. Henriette W. Langdon,
Dr. Michael Kimbarow,
Dr. June McCullough, Dr. Jean Novak,
and Dr. Gloria Weddington

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 coursework. 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 Studies and Research website at www.sjsu.edu/gradstudies.

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.

Minor – Speech Pathology

	Semester Units
EDSE 102, EDSP 110, EDSP 120, EDAU 115 and EDAU 170.....	15
Total Units Required	15

Courses**AUDIOLOGY****UPPER DIVISION****EDAU 115. Introductory Hearing Science**

Anatomy, physiology and psychoacoustics of the auditory system; theories of hearing and physics of sound.

Prerequisite: Upper division standing or instructor consent.

3 units

EDAU 170. Audiology I

Theory and application of the fundamentals of pure tone and speech, audiometric procedures and immittance measurements basic to identification audiometry and the differential diagnosis of peripheral auditory problems.

Prerequisite: EDAU 115 or instructor consent.

Lecture 2 hours/lab 3 hours.

3 units

EDAU 172. Introduction to Principles of Aural Rehabilitation

Principles and methods of aural rehabilitation procedures. Components include development of listening, visual and oral communication skills; psycho-social aspects of hearing loss.

Prerequisite: EDAU 115 and EDAU 170.

3 units

EDAU 177. Practicum in Audiology

Supervised clinical experience in basic testing and treatment of children and adults with communicative disorders due to hearing impairments.

Prerequisite: EDAU 170 and EDAU 172 or instructor consent.

Repeatable for credit

Credit / No Credit

3 units

EDAU 180. Individual Studies

Supervised study in specific fields of audiology not covered by offered courses.

Prerequisite: Upper division standing and area coordinator consent.

Repeatable for credit

Credit / No Credit

1-3 units

GRADUATE**EDAU 257. Seminar in Audiology**

Current issues impacting the practice of audiology.

Prerequisite: 6 units of graduate work or instructor consent.

Repeatable for credit

3 units

EDAU 273. Aural Rehabilitation

Aural rehabilitative services and procedures for the hearing impaired. Emphasis on governmental agencies, community services, especially for adult and geriatric populations, school programs and the professional role and responsibilities of the audiologist.

Repeatable for credit

3 units

EDAU 277. Advanced Practicum in Aural Rehabilitation

Supervised advanced clinical experience with children and adults with complex communicative disorders due to hearing impairments, leading to independence in administering therapeutic services.

Prerequisite: EDAU 177, EDAU 172 (or equivalent) and instructor consent.

Repeatable for credit

1-3 units

EDAU 298. Special Studies

Supervised study in a specific field of audiology.

Prerequisite: Consent of area coordinator.

Repeatable for credit

Credit / No Credit

1-3 units

SPEECH PATHOLOGY**LOWER DIVISION****EDSP 060. Communication Disorders Service Program**

For students with speech, language and hearing behaviors that interfere with daily communication. Individual student needs determined by assessment conducted at beginning of semester.

Lab 3 hours.

Repeatable for credit

Credit / No Credit

1 unit

UPPER DIVISION**EDSP 110. Resources for Human Communication Disorders**

Scope of human communication disorders and public attitudes affecting educational, sociological, psychological and vocational opportunities of the communication disordered. Management resources for the communication handicapped.

Prerequisite: Upper division standing or instructor consent.

3 units

EDSP 111. Introduction to Phonetics

Principles of the International Phonetic Alphabet and their application.

Prerequisite: Upper division standing or instructor consent.

3 units

EDSP 112. Treatment and Management of Speech-Language Disorders

Impact of technological and societal changes on the delivery of human communication services with emphasis on study of cultural diversity in communication disorders.

Prerequisite: EDSP 110 and EDSP 111.

Lecture/lab 5 hours.

3 units

EDSP 113. Speech Science

Analysis and measurement of the components and processes involved in the production and reception of speech.

Prerequisite: Upper division standing and instructor consent

3 units

EDSP 120. Articulation and Language Disorders

Etiology and remediation for deviant and disordered articulation and language.

Prerequisite: EDSE 102, EDSP 110, EDSP 111

EDSP 113 or instructor consent.

Lecture/lab 5 hours.

3 units

EDSP 124. Assessment in Speech Pathology

Principles and practices of assessment of language, speech and communication disorders.

Clinical procedures and theory in diagnostic evaluations.

Prerequisite: EDSE 102, EDSP 110, EDSP 111 or instructor consent.

Lecture/lab 5 hours.

3 units

EDSP 125. Language Disorders

Etiology and remediation of deviant and disordered language.

Prerequisite: EDSE 102, EDSP 110, EDSP 111 or instructor consent.

Lecture/lab 5 hours.

3 units

EDSP 161. Normal Processes of Speech, Language and Hearing

Normal neuropsychological processes of swallowing, speech, language and hearing. Normal functioning of the nervous system in sensory, cognitive and motor processes.

Prerequisite: Upper division standing, EDSP 113 or instructor consent.

3 units

EDSP 162. Communication Disorders of Aging

Study of etiology, assessment and treatment of acquired and developmental disorders associated with aging. Speech, language, hearing and related disorders emphasized.

Prerequisite: EDSP 110, EDSP 112, EDSP 113, EDSP 120, EDSP 125, EDSP 161 or instructor consent.

Lecture/lab 5 hours.

3 units

EDSP 177. Practicum in Speech Pathology

Supervised clinical experience with children and adults who have speech and language disorders.

Prerequisite: EDSP 112, EDSP 120 and EDSP 125 or instructor consent.

Credit / No Credit

1-3 units

EDSP 180. Individual Studies

Supervised study in specific fields of speech pathology.

Prerequisite: Upper division standing and area coordinator consent.

Repeatable for credit

Credit / No Credit

1-3 units

GRADUATE**EDSP 221. Research Seminar in Communicative Disorders**

An overview of the theory, procedures, application and use of research in educational settings; assist in the study of a specific area of applied research from the current professional literature; and assist in the development of a specific research proposal.

3 units

EDSP 222. Navigating Oral and Written Connections: Theory and Applications

Explores and discusses connections between listening, speaking, reading and writing with applications in assessing and planning intervention programs for monolingual and bilingual individuals who have a developmental or acquired language-learning disabilities. Required for speech-language pathologists.

Prerequisite: Instructor consent.

Repeatable for credit

3 units

EDSP 250. Seminar in Voice Resonance Disorders

Provides an understanding of anatomical, neuroanatomical, physiological and acoustic parameters of normal speech production in diagnosing and in treating voice and resonance disorders.

Prerequisite: Graduate standing or instructor consent.

3 units

EDSP 251. Seminar in Phonological Disorders

Establishes a level of advanced competency in the knowledge and understanding of phonology and phonological disorders: the procedures of analysis, the assessment of phonological disorders and the establishment of intervention strategies as a logical consequence of diagnostic findings.

Prerequisite: Graduate standing, EDSP 111, EDSP 120 or instructor consent.

Repeatable for credit

3 units

EDSP 254. Seminar in Neurological Disorders

Provides an understanding of the neuropsychological, cognitive and linguistic correlates underlying adult neurological disorders. Assessment and treatment for a variety of disorders emphasized.

Prerequisite: EDSP 161, EDSP 162 or instructor consent.

Repeatable for credit

3 units

EDSP 255. Seminar Dysphagia and Motor Speech Disorders

Provides an understanding of motor speech disorders. Emphasis on assessment and treatment of apraxia, dysarthrias and dysphagia.

Prerequisite: EDSP 161, EDSP 162, EDSP 254 or instructor consent.

Repeatable for credit

3 units

EDSP 258. Seminar in Fluency Disorders

Etiological theories, group and individual therapy, parameters of research, interdisciplinary considerations.

Prerequisite: Graduate standing or instructor consent.

3 units

EDSP 259. Seminar in Language Disorders in Children

Provides an understanding of the neuropsychological, cognitive and linguistic correlates of developmental language disorders which underlie the competencies to diagnose and provide treatment for children with language impairments.

Prerequisite: EDSP 124, EDSP 125 or instructor consent.

Repeatable for credit

3 units

EDSP 260. Seminar in Oral Facial Anomalies

Provides an understanding of the anatomical, physiological and associated correlations of birth defects which will underlie the competence to evaluate and design therapeutic intervention procedures for such populations.

Prerequisite: EDSP 113 and EDSP 161.

3 units

EDSP 262. Speech and Language in a Cross-Cultural Society

Communication development and disorders in bilingual clients. Emphasis on the assessment of such disorders to the bilingual population.

3 units

EDSP 264. Contemporary Professional Issues

Organization and development of profit and nonprofit agencies that serve the communicatively impaired. Role and responsibilities of supervisors included.

3 units

EDSP 265. Seminar in Cognitive Disorders

Provides a framework for better understanding the process of cross-generational communication and the improvement of communication competencies for interaction with cognitively impaired persons.

3 units

EDSP 266. Psychological and Pragmatic Aspects of Speech and Language

Parameters of both verbal and nonverbal communication as it pertains to psychological and pragmatic disorders of communication. Distinct differences between disorders of verbal and nonverbal communication and cross-cultural/multilingual issues emphasized.

Repeatable for credit

3 units

EDSP 269. Field Experience in Public Schools – Speech Pathology and Audiology

Supervised teaching in speech pathology and audiology. Two hundred clock hours minimum requirement for credential as speech, language and hearing specialist.

Repeatable for credit

Credit / No Credit

10 units

EDSP 276. Practicum in Advanced Assessment

Supervised clinical experience in assessment of a variety of speech/language disorders. Laboratory and classroom experience required.

Prerequisite: EDSP 124 and instructor consent.

Repeatable for credit

3 units

EDSP 277. Advanced Practicum – Speech Pathology

Working with children, adult, and group clients within a clinical practicum setting including preparing lesson plans, analyzing assessment results, developing and implementing therapy activities, collecting data, conducting client conferences and writing reports and home programs.

Prerequisite: Graduate standing and instructor consent.

Repeatable for credit

1-3 units

EDSP 278. Clinical Management and Practicum

Supervised clinical experience.

Prerequisite: EDSP 254, EDSP 255, EDSP 276, EDSP 277 and instructor consent.

Repeatable for credit

Credit / No Credit

6-10 units

EDSP 298. Special Studies

Supervised study in a specific field of speech pathology.

Prerequisite: Instructor consent.

Repeatable for credit

Credit / No Credit

1-3 units

EDSP 299. Master's Thesis

Supervised thesis work in the field of speech pathology.

Prerequisite: Instructor consent.

Repeatable for credit

Credit/No Credit/Report in Progress

1-4 units

EDSP 300. Seminar in Educational Management for the SLD Classroom

Behavior management techniques and principles, procedures and instruments used in the instructional strategies for teaching reading, language arts and quantitative concepts to children with severe language/aphasia handicaps.

Prerequisite: Clinical Rehabilitation Service Credential or instructor consent.

3 units

Education – Counselor Education

College of Education

Sweeney Hall 401
408-924-3634

Professors

Lewis Aptekar
Xiaolu Hu, Chair
Andrew R. Hughey, Graduate Coordinator

Assistant Professors

Dolores Mena
Lisa Oliver

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

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 4, to gain the skills needed for academic and career planning, and career orientation. EDCO 10 (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 Studies and Research website at www.sjsu.edu/gradstudies.

Courses

COUNSELOR EDUCATION

LOWER DIVISION

EDCO 004. Personal, Academic and Career Exploration

This course explores the concepts and applications of personal decision-making. Introduction to life-span development concepts through the use of self-assessment instruments and procedures. Orientation to San Jose State University.

GE: E
3 units

EDCO 010. Adjunct Learning

Reading/writing/learning skills necessary for comprehension of textbooks and lectures in various disciplines; includes notetaking, exam preparation and library techniques. Not repeatable for graduation credit.

Repeatable for credit
No Degree Credit
1-2 units

UPPER DIVISION

EDCO 180. Individual Studies

Supervised study in specific fields of counselor education not covered by other courses.

Prerequisite: Program director consent.
Repeatable for credit
Credit / No Credit
1-3 units

GRADUATE

EDCO 215. Introduction to Counseling and Guidance

Introduction to the theories, concepts and competencies of counseling and guidance. Overview of the related professional roles and settings.

3 units

EDCO 218. Practicum in Guidance I

Develops skills in the use of a systematic communication process and psychodynamic action methods. In Program courses, these processes together are basic to all further individual and group counseling and teaching courses. One weekend required.

Credit / No Credit
3 units

EDCO 219. Practicum in Guidance II

Provides for the expansion and extension of the skills with a focus on group systems communication. Media will be used to help students be aware of constructive and destructive elements of interpersonal functioning in group systems. Two intensive training weekends.

Repeatable for credit
Credit / No Credit
3 units

EDCO 221. Research Seminar in Counselor Education

An overview of the theory, procedures, application and use of research in educational settings; assist in the study of a specific area of applied research from the current professional literature; and assist in the development of a specific research proposal.

3 units

EDCO 227. Dynamics of Community/School Relations

Psychological dynamics and social relationships influencing community and school. A major focus on increased understanding of multiethnic and historical traditions in relation to pupil personnel services.

3 units

EDCO 232. Laws and Ethics for Counselors

Meets the requirement "Laws relating to children and child welfare" in the Student Counseling Programs. Covers local, state and federal laws relating to children, youth and family.

2-3 units

EDCO 244G. Seminar in Cultural Perspectives in Counseling

Advanced study of concepts and procedures of counseling and consulting with an emphasis on understanding human behavior dynamics in the context of specific ethnic and cultural experiences.

3 units

EDCO 248. Dynamics of Behavior and Development

Study of the dynamics of individual and group behavior over the lifespan. Specific study of selected personality and development theory and practices.

3 units

EDCO 266. Education and Career Planning

Study of theory and practice of educational and career planning. Includes sources, uses, evaluation and filing of educational and career information and procedures for working with both individuals and groups.

3 units

EDCO 267. Practicum in Lifespan and Career Development

Practicum in lifespan development and career planning with emphasis on the development of applied skills in career counseling. May be repeated for credit when an alternate focus is shown in the Schedule of Classes.

Prerequisite: Core curriculum.
Repeatable for credit
1-3 units

EDCO 268. Lifespan Development Theory

Study of lifespan and career development across cultures and ages. Emphasis on the holistic integration of cognitive, affective and physiological aspects of development over the lifespan. This development considered in the context of diverse cultural and ethnic perspectives.

3 units

EDCO 269. Transpersonal Development Theory

Development of further understanding of theoretical material focusing on transpersonal theory and its application to individual and institutional renewal, creativity, curricula and workshops. Recommended for further journal practice.

3 units

EDCO 279. Advanced Group Process Theory and Practice

Focus on diverse theoretical approaches in group dynamics, group facilitation/leadership and the group as an instrument of learning within varying institutional settings.

Prerequisite: Core curriculum and instructor consent.
3 units

EDCO 280. Practicum in Multicultural Counseling

Focus on individual and group counseling skills with emphasis on unique aspects of varying cultures. May be repeated for credit when an alternate focus is shown in the Schedule of Classes.

Prerequisite: Core curriculum.

Repeatable for credit

3 units

EDCO 282. Educational Assessment for Counselors

Utilization of standardized group tests and other evaluative techniques of ability and achievement with special emphasis upon interpretation and use of test results in the improvement of instruction and in administrative procedures. Elementary statistical techniques essential for test interpretation.

3 units

EDCO 283. Advanced Educational Assessment

Concept and practice in uses of standardized evaluative instruments in school and community. Emphasis on generating curriculum and guidance hypotheses for groups.

Prerequisite: Core curriculum.

3 units

EDCO 286. Theory of Organization Change

Organizational development theory and practice with emphasis given to school and related agency settings. Knowledge and skill development in using institutional change strategies and innovations stressed.

Prerequisite: Core curriculum.

3 units

EDCO 287. Seminar in Guidance Systems Analysis

Problems of handling data in school systems. In addition to the functional analysis, includes development of computer software applications. Flexibility given in terms of the special areas of interest to the students.

Prerequisite: Core curriculum and instructor consent.

3 units

EDCO 288. Seminar in Counseling Theory and Practice

Assists students in the clarification of philosophical and psychological theory and develops a consistent individual and group counseling theory in relation to a defined lifestyle and the study of practice in school and agency settings.

Prerequisite: Core curriculum.

Corequisite: EDCO 280.

3 units

EDCO 289. Seminar in Professional Counseling

A culminating seminar which emphasizes a critical review and critique of theory and research in application of human development specialties. May be repeated for credit when an alternate focus is shown in the Schedule of Classes.

Prerequisite: Instructor consent.

Repeatable for credit

3 units

EDCO 292. Supervised Experience in Counseling

Supervised field experience in guidance and counseling. Assignments to public schools or agencies.

Prerequisite: Core curriculum.

Repeatable for credit

Credit / No Credit

3-6 units

EDCO 293. Practicum in Child and Substance Abuse

A practicum in peer group systems and psychodrama counseling intervention for treatment of addiction, physical and sexual abuse, teen pregnancy and other at-risk groups. Required participation in a peer group counseling process.

Prerequisite: Instructor consent.

Repeatable for credit

3 units

EDCO 294. Practicum in Self-Development

Facilitates training in individual and group counseling methods, including transpersonal journal, psychodrama and peer group techniques.

Prerequisite: EDCO 218, EDCO 219 and instructor consent.

Repeatable for credit

3 units

EDCO 298. Special Studies in Education

Supervised study in the field of counseling and guidance.

Prerequisite: Consent of program director or designated faculty.

Repeatable for credit

Credit / No Credit

1-3 units

Education – Educational Leadership

College of Education

Sweeney Hall 219
408-924-3616

Associate Professors

Noni Mendoza Reis, Chair

Assistant Professors

Arlando Smith
Gary Stebbins

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

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 Course Pattern

	Semester Units
EDAD 200, EDAD 201, EDAD 202, EDAD 203, EDAD 204, EDAD 205 and EDAD 206; EDAD 242A or EDAD 242B	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 Course Pattern

	Semester Units
EDAD 270 EDAD 275A EDAD 275B EDAD 275C EDAD 275D EDAD 285A	24

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 30 units selected from the Preliminary Credential Program requirements, students pursuing the master's degree must complete the following:

	Semester Units
Core	27
EDAD 200, EDAD 201, EDAD 202, EDAD 203, EDAD 204, EDAD 205, EDAD 206, EDAD 242A and EDAD 242B	
Additional Courses	3
EDAD 221 and EDAD 253	

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 Studies and Research website at www.sjsu.edu/gradstudies.

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 Studies and Research website at www.sjsu.edu/gradstudies.

Courses

ADMINISTRATION AND HIGHER EDUCATION

GRADUATE

EDAD 200. The School Manager

Management skills for leading effective school organizations. Present and emerging issues in our society and how they relate to schooling. Governance of education.

Prerequisite: Admission to Graduate Division.
3 units

EDAD 201. The School Leader

Leadership as principal and program administrator in a variety of settings. Promotion of successful learning. Instructional program administration. Personnel functions at school level. Group problem solving and decision-making.

Prerequisite: Admission to Graduate Division
3 units

EDAD 202. The Educator

Curriculum development and implementation. Instructional program organization and improvement. Instructional program and curriculum evaluation. Characteristics of effective schools. Curriculum balance, integration and congruence.

Prerequisite: Admission to Graduate Division.
Repeatable for credit
1-6 units

EDAD 203. The School Human Resources Administrator

Certified staff supervision and staff development. Organization development, staff motivation and personnel management functions at the district level.

Prerequisite: Admission to Graduate Division.
3 units

EDAD 204. School Fiscal and Legal Leadership

State and federal legal frameworks and landmark judicial decision in education. Application of constitutional, statutory, case and administrative law to school settings. Process of collective bargaining. Management of employee agreements. Sources of public school funding. School site budget development.

Prerequisite: EDAD 200 and admission to Graduate Division
3 units

EDAD 205. The School Leader in the Community

Mobilization of community and public agency resources. Response to cultural and socio-economic diversity in the community. Communication with the community.

Prerequisite: Admission to Graduate Division.
3 units

EDAD 206. Advocate for All Students

Administration of programs for handicapped, economically disadvantaged and other exceptional students. Needs assessment and goal setting. Preparation of proposals for competitive funding to foundations and public agencies.

Prerequisite: Admission to Graduate Division.
3 units

EDAD 221. Research Seminar in Educational Leadership

An overview of the theory, procedures, application and use of research in educational settings; assist in the study of a specific area of applied research from the current professional literature; and assist in the development of a specific research proposal.

3 units

EDAD 242A. Internship in School Administration and Supervision

Application of administrative skills in various educational settings in instructional leadership, school management, personnel management and business management. Appropriate for educators with a greater than half-time management assignment.

Prerequisite: Program director consent.

Repeatable for credit

Credit / No Credit

3-6 units

EDAD 242B. Administrative Field Experiences

Application of administrative skills in various educational settings in instructional leadership, school management, personnel management and business management. Leadership and management of school change initiative.

Prerequisite: EDAD 200 and advisor consent.

6 units (two semesters).

Repeatable for credit

Credit / No Credit

2-8 units

EDAD 242H. Educational Field Work in Higher Education

Designed to provide opportunity for supervised field experience in administration in community colleges and universities.

Repeatable for credit

Credit / No Credit

3 units

EDAD 253. Seminar in Administration in Educational Settings

Analysis of practical problems in educational administration. Application of planning, evaluation and research methodologies to problems in education.

Prerequisite: Completion of all other courses in the administrative credential sequence and EDLD 221.

3 units

EDAD 270. Administrative Assessment and Induction

Assessment activities for development of Professional Development Action Plan. Development of a plan with official district representative, student, mentor and university supervisor.

Prerequisite: Admission to Professional Services Credential Program.

Credit / No Credit

2 units

EDAD 275A. The Successful School

Based on problem approach to educational administration through exploration of essential questions dealing with leadership in successful schools. Challenged to answer questions/problems in a way that continues development as an educational leader. Challenged to raise questions/problems that you feel are essential.

Prerequisite: EDAD 270 and admission to Professional Services Credential Program.

2 units

EDAD 275B. Improving Schools From Within and Without

One of the courses in the core program of the Professional Credential Program. Assessment and improvement of school level learning support systems; development, supervision and evaluation of certificated staff.

Prerequisite: EDAD 270 and admission to the Professional Services Credential Program.

6 units

EDAD 275C. Building Equity in Diverse Communities

One of the courses in the core program of the Professional Credential Program. Exploring leadership behaviors that maximize learning for all students.

Prerequisite: EDAD 270 and EDAD 275B.

2 units

EDAD 275D. Politics and Economics of Education

One of the courses in the core program of the Professional Credential Program. School, district, state and federal governance, and management. Private sector/public sector financial relationships and school/community pressure groups.

Prerequisite: EDAD 270 and admission to the Professional Services Credential Program.

2 units

EDAD 285A. Advanced Fieldwork/Peer Coaching/Mentoring

Supervised advanced field experiences for school administrators. Peer coaching skills are applied to specialization areas. May not be repeated in the same semester.

Prerequisite: EDAD 270, admission to Graduate Division and admission to the Professional Services Credential Program.

Repeatable for credit

Credit / No Credit

2-6 units

EDAD 298. Individualized Studies in Education

Supervised study in school administrations for both the Preliminary and Professional Services Credential Programs.

Prerequisite: Admission to Graduate Division; EDAD 200 or EDAD 270; advisor consent.

Repeatable for credit

Credit / No Credit

1-4 units

Education – Elementary Education

College of Education

Sweeney Hall 305
408-924-3771

Professors

Marilyn Chi
Katharine Davies Samway
William Hanna
Sandra Hollingsworth
Judith Lessow-Hurley
Nancy Lourie Markowitz
Carolyn Nelson, Chair
Sharon Parsons
Rosalinda Quintanar
Alexander Sapiens

Associate Professors

Rocio Dresser
Mark K. Felton
Patricia Swanson
David Whitenack
Andrea Whittaker
Deborah Wood

Assistant Professors

Halcyon Foster
Roxana Marachi
Colette Rabin
Grinell Smith

Curricula

- Minor, Education
- Credential, Multiple Subject
- Credential, Multiple Subject BCLAD
- MA, Education, Concentration in Curriculum and Instruction

The Elementary Education Program offers an 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.

**Service learning will be incorporated into EDTE 162 and the EDEL 103*

Multiple Subject Credential Program

The multiple subject credential is 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, Multiple Subject BCLAD – Spanish preliminary credentials.

Admission Requirements

Admission requirements include the following:

- Admission to 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 the U.S. Government and Constitution Requirement
- Completion of preprofessional experience in a public school setting or approved field-based course in the major
- Passing scores on the California Subject Examinations for Teachers (CSET) test
- Bachelor's degree
- Certificate of Clearance
- Basic Skills in Technology

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 coursework. Contact the Program Admissions Advisor in Sweeney Hall 305 for information and applications. Information is also available on the SJSU website, www.sjsu.edu/elementaryed.

Professional Preparation Program Requirements for the Preliminary Multiple Subject Credential

Preprofessional Coursework Leading to the Multiple Subject Credential meets requirements set by the California Commission on Teacher Credentialing. Coursework for the Preliminary Credential includes theoretical foundations, studies supporting Cross-Cultural, Language and Academic Development with an optional bilingual emphasis (BCLAD), subject area methodology and student teaching practicum. 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 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 and Student Services office (Sweeney Hall 108). You may discuss your interests for program planning with an advisor during the application process.

Multiple Subject BCLAD (Bilingual Cross-Cultural, Language and Academic Development)

Students with an interest in the Spanish emphasis program should contact the Credential Services Office (Sweeney Hall 108) in the College of Education for information concerning prerequisites. Applicants are accepted for fall and spring semesters.

MA – Education, Concentration in Curriculum and Instruction

The MA – Education with a concentration in Curriculum and Instruction is designed as a pre-doctoral program of studies and a curriculum for professional educators interested in advanced study leading to service as a curriculum supervisor, curriculum developer, educational researcher, mentor teacher or similar educational position at elementary and middle school levels.

Admission Requirements

1. An application for Admission to the university.
2. A Preliminary Teaching Credential.
3. An Application for admission to the Curriculum and Instruction Graduate Program. Application forms are available in the Department of Elementary Education Office located in Sweeney Hall 305 or on www.sjsu.edu/elementaryed/.
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 will be 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 Curriculum and Instruction Graduate Coordinator for MA – Education Programs.

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

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 Studies and Research website at www.sjsu.edu/gradstudies.

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 at www.sjsu.edu.

Semester Units

Core Courses	9
Approved 200-level courses in research methods, foundations of education, and curriculum/instruction.	
Thesis or Special Studies	3
EDTE 299 (Plan A) or EDTE 298 (Plan B)	
Elective courses	18
At 100- or 200-level in the division or other departments, related to the candidate's career objective, chosen with the advisor's approval.	
Total Units Required	30

Courses

ELEMENTARY EDUCATION

UPPER DIVISION

EDEL 102. Psychological Foundations of Education

Cognitive, affective and social/emotional development related to school settings. Theories of development, learning and instruction critically examined. Other topics include individual differences, measurement, evaluation, instructional goals, classroom management and diversity in the classroom.

Perequisite: Upper division standing.
3 units

EDEL 103. Social-Multicultural Foundations of Education

Foundational preparation focused on implications of social, cultural, linguistic and economic diversity on teaching and learning. Emphasis on understanding the implications of history and social context on the educational endeavor in a pluralistic and democratic society.

Perequisite: Upper division standing.
3 units

EDEL 108A. Curriculum: Reading/Language Arts

Elementary school language/literacy acquisition in culturally diverse classrooms; emphasis on listening, speaking, reading and writing within the context of theory and practice. May be repeated for different subtitle.

Perequisite: Upper division standing.
Repeatable for credit
2-6 units

EDEL 108B. Curriculum: Science

Elementary school science curriculum and theoretical approaches; emphasis on materials, methods, content and evaluation procedures for teaching science in elementary and middle schools in a multicultural and technological society. May be repeated for different subtitle.

Perequisite: Upper division standing.
Repeatable for credit
1-3 units

EDEL 108C. Curriculum: Social Studies

Elementary school social studies curriculum and instruction with emphasis on the influence of ethnic, linguistic, cultural, economic, gender and disability factors on present day culture.

Perequisite: Upper division standing.
Repeatable for credit
1-3 units

EDEL 108D. Curriculum: Mathematics

Elementary school mathematics curriculum and methodology relationships between instructional materials and how children construct knowledge; the role of technology and issues that bear on the teaching of school mathematics. May be repeated for different subtitle.

Perequisite: Upper division standing.
Repeatable for credit
1-3 units

EDEL 108E. Teaching Reading in Linguistically and Culturally diverse classrooms

Assessing and teaching reading in diverse classrooms in grades K-8. Integrates research, theory and practice. Requires some classroom observation and working in schools with K-8 students.

Prerequisite: LLD 108, ENGL 103 or LLD 107.

Note: Should be taken in final semester of undergraduate program.

Repeatable for credit

3 units

EDEL 143A. Orientation to Student Teaching

Role of state and local government in education. Clinical observation of classroom, school and district organization. Emphasis on lesson planning.

Prerequisite: Upper division standing.

Repeatable for credit

Credit / No Credit

1-6 units

EDEL 143B. Student Teaching: Practicum

Practicum in public school classrooms at two grade levels for student teaching experience; includes field and campus seminar. Supervision by College of Education faculty.

Prerequisite: EDEL 143A.

Repeatable for credit

Credit / No Credit

3-10 units

GRADUATE

EDEL 205. Advanced Studies in Early Childhood Education Curriculum

Issues in early childhood education curriculum. Includes current issues and practices, curriculum planning and interrelation of theory and practice in early childhood curriculum.

Prerequisite: EDEL 102 and EDTE 208.

3 units

EDEL 207. Issues in Early Childhood Education and Day Care

Problems of early childhood education and day care. Topics include program goals, design of curricula, roles of teachers and other adults, model programs, transitions between preschool and primary grades, integration of programs within the family and community, and procedures for planning and evaluation.

Prerequisite: EDEL 102 or instructor consent.

3 units

EDEL 243. Seminar in Early Childhood Education

Application of the psychological and sociological foundations of early childhood education to the classroom. Meets requirements of students seeking MA degrees in education with a concentration in early childhood education.

Prerequisite: EDTE 208 or instructor consent.

3 units

EDEL 250. Programs in Early Childhood Education

Practical experience in organization and management of early childhood education programs. Individual study, seminars and field work to develop skills and understandings for working with faculty and staff, parents and community personnel.

Prerequisite: EDEL 205.

3 units

EDEL 251. Advanced Early Childhood Education Mathematics Curriculum

Current trends in preschool, kindergarten and primary mathematics curriculum, in relation to the history of mathematics in early childhood education.

Prerequisite: EDEL 205.

3 units

EDEL 286. Elementary School Mathematics

Comprehensive study of the theoretical and practical considerations underlying effective elementary and middle school mathematics programs. Emphasis on psychological/epistemological factors, research in mathematics education, including curriculum, materials, and gender and cross-national/cultural issues.

Prerequisite: EDEL 108D or instructor consent.

3 units

EDEL 291. Seminar in Teaching Elementary Social Studies

Recent developments and innovations in elementary social studies education including inquiry teaching, curriculum development and revision, implementation of social science concepts and development and utilization of multicultural studies for effective teaching.

Prerequisite: EDEL 108C.

3 units

TEACHER EDUCATION

UPPER DIVISION

EDTE 107. Clinical Supervision for Master Teachers

For master/resident teachers focusing on supervision of student teachers using clinical perspective. Proficiency in conferencing, observing instruction, data collecting and providing feedback gained while assisting student teacher's progress in instructional planning, implementation and evaluation.

Prerequisite: Teaching credential or instructor consent.

Activity 2 hours.

Offered only on an irregular basis.

Repeatable for credit

Credit / No Credit

1 unit

EDTE 160. Integrating Asian Culture Into the Classroom

Integrating Asian languages and cultures into the classroom, enhancing knowledge and developing strategies for teaching in multicultural settings.

Prerequisite: Upper division standing.

Repeatable for credit

1-3 units

EDTE 162. Meeting the Needs of Second Language Learners

Second Language acquisition theories and application of teaching in diverse secondary classrooms.

Prerequisite: Upper division standing.

3 units

EDTE 166. Pre-Professional Experience

Observation of learners; service as teacher assistants in public school classrooms; tutoring. May be repeated once.

Prerequisite: Upper division standing.

Repeatable for credit

Credit / No Credit

1-3 units

EDTE 180. Individual Studies

Supervised study in specific fields of elementary or secondary education not covered by offered courses.

Prerequisite: Division head consent.

Repeatable for credit

Credit / No Credit

1-3 units

EDTE 190. Health Education for the Classroom Teacher

Current problems of individual, family and community health. Theories, organization, methods and materials for teaching health education.

Prerequisite: Upper division standing.

3 units

GRADUATE

EDTE 201. Critical Issues in Education

A cross-disciplinary investigation of fundamental value issues of American education in a democratic society, considered in the context of the problems and prospects of world civilizations.

3 units

EDTE 202. Science for the Inclusive Classroom

See EDSE 202.

4 units

EDTE 203. Mathematics for the Inclusive Classroom

See EDSE 203.

4 units

EDTE 204. Reading/Language Arts for the Inclusive Classroom

See EDSE 204.

8 units

EDTE 205. Social Studies for the Inclusive Classroom

See EDSE 205.

4 units

EDTE 206. Advanced K-8 Curriculum and Instruction

Advanced methods in K-8 school curriculum and instruction for beginning teachers. Emphasis on best practices as delineated in the California Standards for the Teaching Profession.

3 units

EDTE 207. Comparative Education

Education systems in selected foreign countries. Emphasis given to educational objectives, curriculum content, teacher education and school organization.

3 units

EDTE 208. Educational Sociology

Role of education in modern social, economic and political life. The school as institution. Problems in American life which affect and are affected by public schools.

3 units

EDTE 209. History of Education

Major developments in educational thought and practice from ancient Greece to now; emphasis on Western Civilization.

3 units

EDTE 210. Becoming a Reader at Any Age

Theory and practice of teaching beginning and struggling readers and writers, both native and nonnative English speakers.

Prerequisite: EDEL 108A or EDSC 138A.

3 units

EDTE 211. Developing Academic Language for Reading Across the Curriculum

Focus on comprehension across subject areas for first and second language learners: background knowledge, fluency, vocabulary, and metacognition.

Prerequisite: EDEL 108A or EDSC 138A.

3 units

EDTE 212. Leadership, Politics and Literacy Program Evaluation

Review of reading research, public policy and effective literacy programs for curriculum leaders.

Prerequisite: EDTE 216 and EDTE 217.

Open to MA candidates in Reading only.
3 units

EDTE 213. Multicultural Literature for Children and Young Adults

Literature for children and young adults that reflects diverse experiences and perspectives. Will address the role of this literature in classrooms.

3 units

EDTE 214. Learning in a High Tech Environment

Teaching and learning with high technology from student-centered perspectives. Lab activities, field observations and investigations in individual areas of specialization. Includes theory to practice, exploring new uses of technology, logistics, leadership roles. May not repeated in the same semester.

Prerequisite: EDIT 122 (or equivalent).

Repeatable for credit
3 units

EDTE 215. A Constructivist Approach to Science

Advanced seminar in elementary and middle level science teaching and learning with emphasis on constructivist perspectives.

Prerequisite: EDEL108B or equivalent.

3 units

EDTE 216. Ongoing Assessment in Your Classroom

Prevention and correction of reading/writing/language difficulties with emphasis on diagnosis and evaluation.

Prerequisite: EDEL 108A, EDSC 138A or instructor consent.
3 units

EDTE 217. Ongoing Assessment in a Clinical Setting

Application of research, diagnostic, prognostic and program development methodology in field settings.

Prerequisite: EDTE 216.
Credit / No Credit
3 units

EDTE 221. Research Seminar in Elementary Education

An overview of the theory, procedures, application and use of research in educational settings; assist in the study of a specific area of applied research from the current professional literature; and assist in the development of a specific research proposal.

3 units

EDTE 223. The Politics of Literacy

State, national and global decisions about literacy instruction and the impact on the profession.

Prerequisite: Teaching experience or English major.
3 units

EDTE 224. Seminar in Educational Psychology

Role of psychology in education. Contributions of educational research to current classroom practice and curriculum design. Applications of educational psychology research to current problems in education. Theoretical and practical approaches to understanding learning and teaching.

Prerequisite: EDSC 172A and EDEL 102.
3 units

EDTE 225. Theory and Practice of Dual Language Instruction

Exploration of the historical, social and political contexts and theoretical foundations of bilingual education. Useful for all who will work with culturally or linguistically different children.

Prerequisite: EDEL 103 or instructor consent.
Repeatable for credit
3 units

EDTE 242C. Educational Internship in Teaching

Repeatable for credit
Credit / No Credit
4-6 units

EDTE 242R. Field Experience – Reading/Language Arts Specialist

Conducting reading/language arts assessments; designing, organizing and implementing reading programs; assisting teachers with reading programs.

Credit / No Credit
1-4 units

EDTE 244. Seminar in School Curriculum

Curriculum in the elementary and middle level school. Includes current issues and practices, curriculum planning and interrelation of theory and practice in elementary education curriculum.

Prerequisite: EDTE 208.
3 units

EDTE 245. Supervision of Student Teaching

Principles, procedures and problems of supervising classroom student teachers.

Prerequisite: Teaching experience.
3 units

EDTE 246. Classroom Management and Governance

Study of theory, practice and research related to effective communication in bilingual/cross-cultural settings.

Prerequisite: EDEL 102, EDEL 103, EDSC 172A and EDSC 173, or instructor consent.
1-3 units

EDTE 247. Supervisory/Coaching Practices for Teacher Leaders

Development of coaching/supervisory behaviors which encourage the development of reflective practitioners. Includes understanding of principles and methods of observing teachers and children, and how to record, analyze and share data to best meet their needs.

Prerequisite: Two years of teaching experience.
3 units

EDTE 250. Qualitative Research in Education

The role of qualitative research in education and society. Historical theoretical groundings, ethical considerations, procedures in development and evaluation of research proposals, techniques of research data analysis.

Prerequisite: EDEL 221 or instructor consent.
3 units

EDTE 255. Community College Education

An introduction to the principles and practices of the community college. Course content includes background, organization, curriculum and contemporary issues in higher education.

Prerequisite: Classified graduate status and/or instructor consent.
3 units

EDTE 256. Learning and Instruction in the Community College

Principles of learning, instructional materials and procedures; and evaluation of learning applied to community college instruction.

Prerequisite: Classified graduate status and/or instructor consent.
3 units

EDTE 257. Supervised Student Teaching in the Community College

An assignment of teaching in the student's major field in a community college for one quarter or one semester. Students are required to meet periodically with the supervisors from the Teacher Education Program.

Prerequisite: Instructor consent.
Credit / No Credit
3-4 units

EDTE 260. Critical Perspectives on Schooling for a Pluralist Democracy

Critical study of theory, practice and research related to effective communication in cross-cultural, multilingual settings.

Prerequisite: EDEL 103.
3 units

EDTE 261. Cross-Cultural Communication for Teachers: Critical Studies in Language, Culture and Narrative

Study of cross-cultural communication for teachers with a focus on theory and practice related to language, culture and narrative in educational settings.

Prerequisite: EDTE 225 or instructor consent.
3 units

EDTE 262. Classroom Issues in the Language/Literacy Development of L2 Learners

Theories of first and second language acquisition and their application to teaching reading, writing and SDAIE in linguistically diverse classrooms.

Prerequisite: EDEL 108A, EDSC 138A or instructor consent.
3 units

EDTE 281. Philosophy of Education

Critical philosophical issues as they bear on education in a democratic society.

3 units

EDTE 290A. ESL Curriculum: Theoretical Foundations

Designed for practicing or prospective teachers of English as a Second Language. Emphasizes the social, psychological and cultural foundations of first and second language learning as they apply to the teaching of language minority students in American schools.

3 units

EDTE 290B. ELD Curriculum: Methods and Approaches

Emphasizes a practical approach to the learning and teaching of English to nonnative speakers. Focuses on all language modalities. Pays particular attention to specially designed academic instruction in English (SDAIE).

3 units

EDTE 290C. Research on Literacy Across the Curriculum for an Equitable Society

Emphasis on research/teacher inquiry with attention to research designs and methods from various disciplinary perspectives for the study of literacy. An historical look at three additional program themes: Reading and Writing Across Cultures and the Curriculum; Second Language Learners; and The politics of Literacy.

Pre/Corequisite: EDTE 290A or EDTE 290B.

Repeatable for credit

3 units

EDTE 290F. Assessing L1 and L2 Language and Literacy

Assessment of L1/L2 students' language and literacy development and learning. Emphasis on authentic assessment, diagnosis and instructional decision-making. Classroom case studies.

Prerequisite: Instructor consent.

Repeatable for credit

3 units

EDTE 292. Writing Across Cultures and the Curriculum

Research, theory and practice of writing development of instruction for native and nonnative English speakers. Emphasis on writing in an integrated curriculum.

Prerequisite: EDEL 108A or instructor consent.

3 units

EDTE 298. Special Studies in Education

Supervised study in a specific educational field.

Prerequisite: Consent of program director.

Repeatable for credit

Credit / No Credit

1-6 units

EDTE 299. Master's Thesis

Supervised thesis in the field of education.

Prerequisite: Admission to candidacy for the master's degree.

Repeatable for credit

Credit/No Credit/Report in Progress

1-6 units

Education – Instructional Technology

College of Education

Sweeney Hall 404
408-924-3620

Professors

Robertta H. Barba, Chair
Mei-Yan Lu

Assistant Professors

Steven McGriff

Curricula

- Certificate, Professional Instructional Technology
- Certificate, Training Methods for Business and Industry
- Certificate, Computer Concepts and Applications
- MA, Education, Concentration in Instructional Technology

Course emphasis is on instructional materials and technology of instruction. Courses offered include basic production and utilization courses intended for students seeking basic training credentials as well as advanced courses for those students specializing in materials preparation, media services, computer utilization, instructional design and telecommunications/distance education.

The Master's degree in Education with an emphasis in Instructional Technology is a broad-based program designed to improve the candidate's competence in providing leadership for improving learning and teaching through the coordinated use of human resources, instructional materials and technology.

There are six areas of specialization:

- Instructional Design and Development
- Media Design and Development
- Media Services Management
- Computers and Interactive Technologies
- Teaching and Technology
- Telecommunications and Distance Learning

Consult the department for more information.

Certificates

The Training Methods for Business and Industry certificate is a twelve-unit program for persons involved as trainers in business or industry.

The Computer Concepts and Applications certificate is a 10-12 unit program which, when added to a California teaching credential, authorizes the holder to teach computer concepts and applications.

The Professional Instructional Technology Certificate

MA – Education, Concentration in Instructional Technology

Basic Requirements

Students entering the program must possess basic competency in media selection, production, computer operation and utilization as required for advanced work in instructional technology. Students should plan with advisors to determine necessary prerequisites.

Requirements for Admission to Classified Standing

Candidates must meet all university requirements for admission. In addition, a student will be admitted to classified status in the MA program in Education, Instructional Technology emphasis, only if the average grade received in the last 60 units is at least a "B".

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 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).

Requirements for Admission to Candidacy

Requirements for Admission to Candidacy are described in this catalog in the section Academic Information: Graduate Regulations, Policies, and Degree Requirements.

Course Pattern

The student must complete an approved program of 30 units and 6 units of prerequisites. The approved program will be individually designed in terms of the specific objectives of each student. It will take into consideration the nature of his or her undergraduate work and any postgraduate work he or she may have completed, as well as any professional and related occupational experience.

	Semester Units
Broad Professional Base	3-9
Selected with advisor approval: Foundations of Professional Education, Curriculum Materials Development and Instructional Design, Research and Evaluation	
Program Courses	12-15
Selected with advisor approval to meet career objectives	
Field Work or Practicum	3
Thesis or Project	3
Candidates, with advisor's approval, plan and complete either a thesis or an approved seminar paper or project concurrently with EDIT 270, Instructional Technology Seminar.	
Approved Electives	0-9
Selected with advisor approval to complete 30-unit total program.	
Total Units Required	30

The final examination, word processed, is taken at least two weeks before the end of the semester in which the candidate expects to receive his or her degree. Scope and manner of the examination are determined by the Instructional Technology Department graduate committee, acting on recommendation of the candidate's 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 Studies and Research website at www.sjsu.edu/gradstudies.

Courses

INSTRUCTIONAL TECHNOLOGY

UPPER DIVISION

EDIT 116. Instructional Materials Preparation

Preparing graphics, photographic and video instructional materials. Includes display graphics, transparencies, slide presentations and introductory videotape.

Prerequisite: Upper division standing.

Lecture/activity 4 hours.

3 units

EDIT 122. Microcomputers in Education

Utilizing microcomputers in an educational environment. Application programs (word processing, databases and spreadsheets) and other software for classroom management and instruction. Preparing, teaching and evaluating a lesson integrating existing software.

Prerequisite: Upper division standing.

Lecture/activity 4 hours.

3 units

EDIT 124. Selection and Evaluation of Computer-Assisted Instruction Software

Courseware for use in computer-assisted instruction in education; application of appropriate evaluation criteria to selection of suitable materials. Specific content areas permit specialization to meet interest and curricular needs.

Prerequisite: EDIT 122 (or equivalent).

Lecture/activity 4 hours.

Offered through Continuing Education.

Repeatable for credit

3 units

EDIT 127. Authoring Microcomputer Programs/Web-Based Learning

Creating instructional materials using authoring software (e.g. Authorware, Director, HTML) adaptive to the needs, requirements and learning levels of a particular course of instruction. Includes designing Web pages for use on the Internet and employing WWW search/retrieval procedures.

Prerequisite: EDIT 122 (or equivalent).

Lecture/activity 4 hours.

3 units

EDIT 128. Instructional Microcomputer Graphics

Using the microcomputer to create, design, edit, store and produce graphics for instructional and training applications in both paper and overhead transparency formats, as well as charts, graphs and free-form graphics.

Prerequisite: EDIT 122 (or equivalent).

Offered only on an irregular basis.

3 units

EDIT 136. Curriculum Materials and Technology

Application of technological advancements and learning theory to selection, production, use and evaluation of elementary school curriculum materials.

Activity 3-9 hours.

Offered only on an irregular basis.

Repeatable for credit

1-3 units

EDIT 180. Individual Studies

Supervised study in specific fields of instructional technology not covered by other courses.

Prerequisite: Program director consent.

Repeatable for credit

Credit / No Credit

1-3 units

EDIT 186. Using Instructional Media

Selection, utilization and evaluation of instructional media in adult learning configurations. Analysis of communication and learning theories. Design and production of teaching and learning materials.

Prerequisite: Upper division standing.

3 units

EDIT 187. Instructional Strategies for Teachers and Trainers

Examination of techniques for improving lectures, presentations, discussions, self-paced learning, evaluating competency and instructor-trainee relationships.

Prerequisite: EDIT 186 or instructor consent.

3 units

EDIT 188. Instructional Technology: Professional Aspects

Provides overview of the instructional technology field. Considers applications in education, schools and public libraries, industry, business, the medical field, public and social service agencies. Explores job opportunities, professional associations and literature of the profession.

3 units

EDIT 190. Instructional Applications of Hypermedia

Authoring interactive instructional/training hypermedia software. Applying basic instructional design principles in the production of hypermedia programs.

Prerequisite: EDIT 122 (or equivalent) and instructor consent.

Lecture/activity 4 hours.

3 units

GRADUATE

EDIT 221. Research Seminar in Instructional Technology

An Overview of the theory, procedures, application and use of research in educational settings; assist in the study of a specific area of applied research from the current professional literature; and assist in the development of a specific research proposal.

3 units

EDIT 225. Facilities Design Seminar

Designing and equipping learning spaces for effective use of instructional materials, equipment and application of technology. Includes learning centers, carrels, resource areas, auto-tutorial, mediated classrooms, electronic learning centers and support areas. Students will apply basic concepts to individual problems and projects.

3 units

EDIT 226. Instructional Design Seminar

Problems in systematically applying educational media technology to instruction and learning. Includes selecting appropriate modes of instruction based on clearly defined objectives, organization of instructional configurations and media implementation.

3 units

EDIT 227. Advanced Instructional Design Seminar

Provides knowledge for developing in-depth competencies relating to elements of instructional design process, personnel working relations and measuring instructional program results. Requires practical applications of instructional design procedures.

Prerequisite: EDIT 226 and instructor consent.

3 units

EDIT 228. Media Processing Web

Development of web media. Stresses involvement of user. Location, evaluation, procurement, physical processing for housing and distribution. Includes techniques for maintaining electronic resources.

3 units

EDIT 229. Media Program Implementation

Analysis of the elements involved in the operation of the local or building level media program. Areas include: teaching use of center; developing public relations programs; staff involvement in curriculum development and implementation; staff utilization in materials distribution, maintenance and control.

3 units

EDIT 235. Designing Self-Directed Learning

Survey of self-directed learning and research in the field. Examination and evaluation of self-instructional materials. Production of self-directed learning materials in appropriate formats.

3 units

EDIT 240. Administration of Instructional Media Service Programs

Development of philosophy, analysis of functions, design of space, facilities and distribution system. Selecting, training and supervising technical and professional staff.

3 units

EDIT 241. Emerging Technologies for Educators

Systematic review of results of research studies in techniques of designing, selecting, producing, using and evaluating the use of curriculum materials and instructional media in teaching; research studies in mass communication media; procedures applicable to setting up small-scale evaluative studies of curriculum materials and media programs within schools.

Prerequisite: Instructor consent.

3 units

EDIT 242. Practicum in Instructional Technology

Supervised professional administrative and nonteaching experiences in approved cooperating agencies. Student is responsible for planning, carrying out and reporting on projects assigned. Includes seminar sessions. To be taken final semester of course work.

Credit / No Credit

3 units

EDIT 247. Field Work

Supervised professional experience in selected school media centers. Includes seminar sessions. Application for assignment must be made during preceding semester.

Credit / No Credit

4 units

EDIT 269. Instructional Development and Media for College Teaching

Systematic applications of new media to college teaching; recent trends in media utilization in higher education; analysis of course objectives in relation to learning experiences and media resources; space and facilities requirements; evaluation of learning outcomes.

3 units

EDIT 270. Instructional Technology Seminar

Provides opportunities for independent research within a seminar setting on problems dealing with curricular applications of instructional materials and technology. Includes systems approach to analysis and evaluation of successful applications and programs.

Prerequisite: EDIT 221 and instructor consent.

3 units

EDIT 271. Computer Applications Seminar

Application of computer technology, Web-based learning theory and research to solving problems relating to the instructional environment and facilities.

Prerequisite: EDIT 122 (or equivalent).

3 units

EDIT 272. Educational Information and Distance Learning System

Advanced studies in history, current development and potential futures of information systems in education. Emphasis on new role of media specialist as coordinator of instructional and research information services. The role of the computer is emphasized.

Prerequisite: EDIT 122 (or equivalent) and instructor consent.

3 units

EDIT 273. Graphic Instructional Resources; Design and Production

Application of communication theory and learning principles to design of graphic instructional materials to improve individual and group learning. Includes design, production, evaluation and preparation of necessary utilization and study materials and guides.

Prerequisite: Basic graphic and computer skills and instructor consent.

3 units

EDIT 274. Instructional Videotape Recording

Planning and designing of instructional videotape program modules for autoinstructional and group learning. Application of learning principles to instructional television with an emphasis on constructing, implementing and evaluating instructional objectives in a video format.

3 units

EDIT 275. Photographic Instructional Resources: Design and Production

Application of communication theory and learning principles to the design of educational products. Focuses on filmless, chemicalless photographic skills for educational settings.

Prerequisite: Basic photo skill, own camera and instructor consent.

3 units

EDIT 278. Instructional Interactive Video

Application of instructional design, video production and communications theory. Emphasis on production and use of interactive video (including video streaming) as educational medium.

Prerequisite: EDIT 190, EDIT 226 and EDIT 274 (or equivalent).

3 units

EDIT 284. Advanced Instructional Videotape Recording

Producing videotapes utilizing professional level computer, digital technology. Production activities will investigate and employ learning systems theory. Involves writing a television treatment, scripting, planning, producing, directing, editing and evaluating an instructional videotape utilizing multiple cameras, video switchers, special effects generator, character generator, audio mixer and video editor in a studio environment.

Prerequisite: EDIT 274 (or equivalent).

3 units

EDIT 285. Distance Learning and Telecommunications

Interactive distance learning models for education and training. Logistics and economics for satellite, ITFS, microwave, fiber-optic, cable, twisted-pair and compressed video. Teleconferencing. Legislation and FCC relations. Support systems: courier, fax voice mail, computers. Evaluation instruments. Visits to operating distance learning sites.

Prerequisite: EDIT 235 or instructor consent.

3 units

EDIT 298. Special Studies in Education

Supervised study in a specific area.

Prerequisite: Program director consent.

Credit / No Credit

1-3 units

Education – Interdisciplinary Courses

College of Education

The following interdisciplinary courses are offered by the College of Education to serve various majors throughout the university.

Courses

EDUCATION

UPPER DIVISION

EDUC 157. Community Action/Community Service

A campus-wide service learning program with opportunities for direct involvement with local community services, both off campus and on campus. Weekly seminars held on campus or at the field site, plus four to six hours of community service work per week at the field site.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

Repeatable for credit

GE: S

3 units

GRADUATE

EDUC 202. Science for the Inclusive Classroom

See EDSE 202.

4 units

EDUC 203. Mathematics for the Inclusive Classroom

See EDSE 203.

4 units

EDUC 204. Reading/Language Arts for the Inclusive Classroom

See EDSE 204.

8 units

EDUC 205. Social Studies for the Inclusive Classroom

See EDSE 205.

4 units

EDUC 298. Individualized Studies in Education

Supervised study in school administrations for both the preliminary and professional services credential programs.

Prerequisite: Admission to Graduate department, EDAD 200, EDAD 270 or advisor consent.

Repeatable for credit

Credit / No Credit

1-6 units

Education – Secondary Education

College of Education

Sweeney Hall 301
408-924-3755

Professors

Roberta Ahlquist
Michael Katz

Associate Professors

Cathy M. Buell, Chair

Assistant Professors

Marina Aminy
Katya Karathanos

Curricula

■ Credential, Single Subject

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 coursework. 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 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 30 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

Courses

SECONDARY EDUCATION

UPPER DIVISION

EDSC 105. Instructional Methods

Study of secondary school curriculum and instructional strategies for teaching in a linguistically and culturally diverse society.

Prerequisite: Admission to single subject credential program and program director consent.
Repeatable for credit

3 units

EDSC 138A. Reading, Language and Instruction in Diverse Content Area Classrooms

Methods for incorporating reading and language instruction in subject area courses; theory and practice of specially designed academic instruction in English for limited English speaking students. Models of instruction for bilingual and limited English speaking students.

Prerequisite: Program director consent.
3 units

EDSC 151. Learning Theories and Reading Instruction for Secondary Students

Addresses theories of teaching and learning, instructional design, and supporting diverse learning needs. Foundation for implementing learning theory and literacy instruction. Interns reflect on practice and apply theory through the development of professional portfolio.

Prerequisite: EDSC 184X, Methods.
4 units

EDSC 152. Student Teaching/Seminar for Interns

Second course in a series required of second year interns. Interns examine student work and curriculum and implement literacy strategies and theories of learning. Includes classroom observation and feedback.

Prerequisite: EDSC 151.
Credit / No Credit
3 units

EDSC 153. Student Teaching/Seminar for Interns

Third of three courses required of second year interns. Action research, peer observation, and self reflection serve as vehicles for examining how instructional design affects student outcomes in content literacy. Includes classroom observations and professional development activities.

Prerequisite: EDSC 152.
Credit / No Credit
2 units

EDSC 162. Language/Literacy Development of L2 Learners

Principles of language structure, variation, and usage. First and second language acquisition theories and application of teaching in diverse secondary classrooms. Social and psychological influences on linguistic behavior of students. Cultural and political issues affecting language attitudes.

Prerequisite: Program Director consent.
3 units

EDSC 172A. Social, Philosophical Multicultural Foundations of Secondary Education

Social, cultural, historical and philosophical concepts in secondary teacher education: Application to problems of curriculum and instruction in multilingual, multicultural classrooms.

Prerequisite: Program director consent.

4 units

EDSC 173. Psychological Foundations of Secondary Teacher Education

Application of developmental cognitive and socio-cultural theories of adolescent psychology and culture as a rationale for teaching and learning.

Prerequisite: Program director consent.

3 units

EDSC 182. Assessment and Evaluation

Principles and practices of measurement and evaluation. Instructional objectives as criteria; construction, selection and use of evaluation instruments. Interpretation of data.

Prerequisite: Program director consent.

3 units

EDSC 184X. Student Teaching I

Supervised teaching with small groups of public junior, middle or senior high school students. In-class experience ranging from observation to classroom teaching. Emphasis on application of theories examined in foundation courses.

Prerequisite: Program director consent.

Repeatable for credit

Credit / No Credit

4 units

EDSC 184Y. Student Teaching II

Minimum 80-120 class periods of classroom teaching in grades K-12. Related school activities.

Prerequisite: Joint approval of major advisor, program director and field placement coordinator.

Repeatable for credit

Credit / No Credit

2-6 units

EDSC 184Z. Student Teaching III

Minimum 80-120 class periods of classroom teaching in grades K-12. Related school activities.

Prerequisite: Joint approval of major advisor, program director and field placement coordinator.

Repeatable for credit

Credit / No Credit

2-6 units

GRADUATE

EDSC 234. Problems in Secondary School Curriculum Development

Advanced course in the curriculum of the secondary school. Includes factors that create needs for curricular changes, current issues, current trends and practices, techniques of curriculum planning and problems associated with administration and supervision of curriculum.

Prerequisite: EDSC 172A, EDSC 173 and EDSC

184X (or equivalent).

3 units

EDSC 238. Diagnosis and Prescription of Reading Problems in the Secondary Schools

Principles and procedures for assessing reading/language effectiveness: designing and selecting instructional materials, methods and contexts for reading/language instruction for secondary students in a linguistically diverse community.

Prerequisite: EDSC 138A or instructor consent.

3 units

EDSC 242C. Advanced Field Experience in Secondary Education

Supervised experience in secondary education. Planning and evaluation of secondary school curriculum and instruction.

Prerequisite: Permission of instructor.

Repeatable for credit

Credit / No Credit

4-6 units

EDSC 242E. Advanced Field Experience in Secondary Education

Supervised experience in secondary education. Planning and evaluation of secondary school curriculum and instruction.

Prerequisite: Instructor consent.

Repeatable for credit

Credit / No Credit

3-8 units

Education – Special Education

College of Education

Department of Special Education

Sweeney Hall 204

408-924-3700

408-924-3701 (Fax)

Deaf Education Program

408-924-3768

Early Childhood Program

408-924-3673

Mild/Moderate Disabilities Program

408-924-3705

Moderate/Severe Disabilities Program

408-924-3692

sped educ@email.sjsu.edu

www2.sjsu.edu/specialed

Professors

Ji-Mei Chang, Coordinator

Margaret Hughes, Coordinator, Early Childhood Special Education

Elba Maldonado-Colon

Hyun-Sook Park, Coordinator

Associate Professors

Chris Hagie, Chair and Coordinator, Internships

Lou Larwood, Coordinator, Deaf and Hard of Hearing

Angela Rickford

Assistant Professors

Jennifer, Coordinator, Mild-Moderate Program

Curricula

- Minor, Atypical Child Studies
- Minor, Deaf Education
- Minor, Special Education
- Certificate, Early Childhood Specialist
- Credential, Deaf and Hard of Hearing
- Credential, Early Childhood Special Education
- Credential, CTC Approved Certificate Program
- Credential, Mild/Moderate Disabilities
- Credential, Moderate/Severe Disabilities
- MA, Education, Concentration in Special Education

The Department of Special Education offers a Master of Arts degree with concentration in Special Education and various specializations. Education Specialist credentials are offered in Deaf and Hard of Hearing, Early Childhood Special Education, Mild-Moderate Disabilities and Moderate-Severe Disabilities. We also offer an Add-on Certificate in Early Childhood Special Education for Mild/Moderate and Moderate/Severe credentialed teachers who want to work with children from birth to 4 years of age. To enable students to start on an Education Specialist credential and to support the preparation of other professionals, the department offers minors in atypical child studies, deaf education, and special education.

All teaching credential programs are accredited by the California Commission on Teacher Credentialing (CCTC) as well as the National Council on the Accreditation of Teacher Education Colleges (NCATE). The Deaf Education Program is accredited by the Council on Education of the Deaf (CED)

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. Graduation from an accredited program and university are required in addition to a grade point average of 2.87 for all credentials applicants. CBEST is required for all specialist credentials applicants. 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.

The Commission on Teacher Credentialing has established the Education Specialist credentials as Level I (Preliminary) and Level II (Clear) credentials. Specific regulations for these levels require that students attend a scheduled orientation meeting before enrolling in courses.

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	10
CHAD 060, EDSE 104 and EDSE 108	

Elective Courses	6
Complete two courses from: CHAD 161, CHAD 164, CHAD 168, EDSE 101, EDSE 102	

Total Units Required	16
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Minor – Deaf Education

Semester Units

Required Courses	15
EDSE 012A, EDSE 014A, EDSE 102, EDSE 115 and EDSE 119	

Elective Course	3
EDSE 012B or EDSE 014B	

Total Units Required	18
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Minor – Special Education

Semester Units

Required Courses	9
EDSE 101 and EDSE 102 (6); EDSE 103 or EDSE 279 (3)	

Elective Course	3
Complete three units from: EDSE 104, EDSE 107, EDAU 115, EDSE 119	

Total Units Required	12
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The California Commission on Teacher Credentialing has established a two-tier credential preparation program for special educators. Students seeking the Education Specialist Credential must complete both a basic (Level I) and an advanced (Level II) professional preparation program.

Level I Preliminary Credential Preparation Program

Educators with a valid California teaching credential in either Multiple Subject (or Elementary) or Single Subject (Secondary) need to meet the prerequisites plus provide proof of their authorization, and follow the program listed under Educators with a Valid California General Education Teaching Credential. All others must choose an area of emphasis (Multiple Subjects or Single Subject), meet the prerequisites, and also take the units under specialization.

Credential – Deaf and Hard of Hearing Programs**Level I and Level II**

	Semester Units
Level I	38-46
General Education Requirements	10-11
Option 1: EDEL 108A (6), EDEL 108D (3) and EDEL 143A (2) or Option 2: EDSC 138A (3), EDSC 184X (3) and an additional 4 units of EDSC elective chosen with prior approval of advisor (4)	
Special Education Core	9
EDSE 102 (3), EDSE 192 (3) and EDSE 279 (3)	
Deaf Ed Core Specialization	15
EDSE 115 (3), EDSE 119 (3), EDSE 178 (3), EDSE 224 (3) and EDSE 276A (3)	
Deaf Ed Advanced Specialization	13-19
EDSE 276B (3), EDSE 276C (3), EDSE 277 (3) and EDSE 281 (4-10)	
Level II	30
Prerequisites	0
Students must be employed teaching deaf students.	
Level I Preliminary Education Specialist Credential	
Deaf Ed Core Specialization	15
Complete six units from: EDSE 104, EDSE 108, EDSE 221; EDSE 209 (3), EDSE 218 (3) and EDSE 228 (3)	
Advanced Field Work	6
EDSE 234 (6)	
Elective	3
Up to three units with prior approval of advisor	
Clear Credential Courses	6
EDTE 190 and EDSE 241	
Total Units Required	68-76

Credential – Early Childhood Special Education**Level I and Level II**

	Semester Units
Level I	32
Special Education Core	9
EDSE 102 (3), EDSE 192 (3) and EDSE 279 (3)	
Early Childhood Intermediate Requirements	10
EDSE 104 (3), EDSE 108 (4) and EDSE 235 (3)	
Early Childhood Advanced Requirements	13
EDSE 154 (6), EDSE 218 (3) and EDSE 221 (4)	
Level II	21
Prerequisites	0
Level I Preliminary Education Specialist Credential	
Special Education Core	6
EDSE 228 (3) and EDSE 285 (3)	
Early Childhood Advanced Requirements	6
EDSE 234 (6)	
Electives	3
3 units with prior approval of advisor	
Clear Credential Courses	6
EDTE 190 (3) and EDSE 241 (3)	
Total Units Required	53

Credential – CTC Approved Certificate Program CTC

	Semester Units
Prerequisites	0
Level II or Clear Education Specialist Credential K-12	
Common Core	20-25
EDSE 104, EDSE 154, EDSE 218, EDSE 221 and EDSE 235	
Total Units Required	20-25

Credential – Mild/Moderate Disabilities

	Semester Units
Level I	27-47
Educators Without a Valid California General Education Teaching Credential	37-47
Prerequisites	10-14
EDSC 138A, EDSC 184X and one practicum course (10) or EDEL 108A, EDEL 108D and EDEL 143A (14)	
Common Core	15-21
EDSE 101 or EDSE 192; EDSE 102, EDSE 105 (for interns only), EDSE 107, EDSE 224 and EDSE 279	
Specialization	12
EDSE 215, EDSE 216 and EDSE 217A	

Educators With a Valid California General Education Teaching Credential

	Semester Units
Prerequisites	10-14
Submit copy of valid California General Education Credential.	
Common Core	15-21
EDSE 101 or EDSE 192; EDSE 102, EDSE 105 (for interns only), EDSE 107, EDSE 224 and EDSE 279	
Specialization	12
EDSE 215, EDSE 216 and EDSE 217A	

Educators With a Valid California General Education Teaching Credential

	Semester Units
Prerequisites	0
Level I Preliminary Education Specialist Credential	
Common Core	15-21
EDSE 101 or EDSE 192; EDSE 102, EDSE 105 (for interns only), EDSE 107, EDSE 224 and EDSE 279	
Specialization	12
EDSE 215, EDSE 216 and EDSE 217A	

Level II

	Semester Units
Prerequisites	0
Level I Preliminary Education Specialist Credential	
Common Core	12
EDSE 209, EDSE 222, EDSE 228 and EDSE 285	
Specialization	9
EDSE 217B and EDSE 230	

Elective

	Semester Units
Prerequisites	3
Up to 3 units. Must be approved by advisor.	
Clear Credential Courses	6
EDTE 190 and EDSE 241	
Total Units Required	70-85

Credential – Moderate/Severe Disabilities**Level I and Level II**

	Semester Units
Level I	43-53
Educators Without a Valid California General Education Teaching Credential	43-58

	Semester Units
Prerequisites	10-14
EDSC 138A, EDSC 184X and one practicum course (10) or EDEL 108A, EDEL 108D and EDEL 143A (14)	

	Semester Units
Common Core	15-21
EDSE 101 or EDSE 192; EDSE 102, EDSE 105 (for interns only), EDSE 107, EDSE 224 and EDSE 279	

	Semester Units
Specialization	18-23
EDSE 154, EDSE 206, EDSE 213, EDSE 214, EDSE 218 and EDSE 235	

	Semester Units
Educators With a Valid California General Education Teaching Credential	35

	Semester Units
Prerequisites	
Submit copy of valid California General Education Credential.	

	Semester Units
Common Core	15-21
EDSE 101 or EDSE 192; EDSE 102, EDSE 105 (for interns only), EDSE 107, EDSE 224 and EDSE 279	

	Semester Units
Specialization	20
EDSE 154, EDSE 206, EDSE 213, EDSE 214, EDSE 218 and EDSE 235	

Level III

	Semester Units
Prerequisites	0
Level I Preliminary Education Specialist Credential	

	Semester Units
Common Core	12
EDSE 209, EDSE 222, EDSE 228 and EDSE 285	

	Semester Units
Specialization	6
EDSE 234	

	Semester Units
Elective	3
Up to 3 units. Must be approved by advisor.	

	Semester Units
Clear Credential Courses	6
EDTE 190 and EDSE 241	
Total Units Required	70-85

MA – Education, Concentration in Special Education

Advisors: Dr. Ji-Mei Chang, Dr. Chris Hagie, Dr. Margaret Hughes, Dr. Lou Larwood, Dr. Jennifer Madigan, Dr. Elba Maldonado-Colón, 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 coursework in areas of specialization: deaf education, 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 are encouraged to apply for both options and attend an orientation to discuss possibilities.

Basic Requirements Prior to Acceptance

1. Admission to SJSU.
 2. A grade point average of 3.0 or better.
- A teaching credential in special education is recommended.

Required Course Pattern

	Semester Units
Core	9
EDSE 285, EDSE 231 and EDSE 218 (must follow this sequence)	
Electives	18
Electives to be chosen with the approval of the advisor.	
Thesis or Special Studies	3
EDSE 299 (Plan A: Thesis), EDSE 220 (Plan B: Completion Seminar) or EDSE 298 (Plan B: Special Project)	
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 Studies and Research website at www.sjsu.edu/gradstudies.

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.

Courses

SPECIAL EDUCATION

LOWER DIVISION

EDSE 012A. Signing Exact English I

Introductory course covering 450 vocabulary items, information about sign language in general and Signing Exact English in particular.

3 units

EDSE 012B. Signing Exact English II

Completes coverage of 943 words of basic SEE vocabulary, ability to use in combination with ASL expressive principles. Basic research information.

Perequisite: EDSE 12A or instructor consent.

3 units

EDSE 014A. American Sign Language I

Introductory course covering basic vocabulary and grammatical structures, appropriate cultural and linguistic behaviors within the deaf community and basic information about the deaf community.

3 units

EDSE 014B. American Sign Language II

Continuation of EDSE 14A. Covers additional basic vocabulary and grammatical structures, cultural and linguistic behaviors within the deaf community and information about the deaf community.

Perequisite: EDSE 14A or instructor consent.

3 units

EDSE 016. Principles of Educational Interpreting

Review of general interpreting principles, principles of interpreting for deaf individuals and principles specific to educational settings, especially K-12. Discussion of role and responsibilities, problem solving techniques and issues and trends.

Perequisite: EDSE 112A or instructor consent.

3 units

EDSE 017. Educational Interpreting in the Elementary and Secondary Setting: Skill Building I

Discussion of interpreting techniques for deaf and hard-of-hearing students at a variety of grade levels and speaker speeds. Prioritizing simultaneous information in the classroom. Practice interpreting a variety of timed audio and videotapes. Individual skill development, analysis and feedback.

Perequisite: EDSE 112A or instructor consent.

Repeatable for credit

1-3 units

EDSE 051. Vocabulary Development

Analysis of word components; practice in terminology of law, business science. Examination of origin of place names, words with unusual histories and foreign phrases used in English.

No credit for English majors.

3 units

EDSE 057. Study Skills

Development of study skills. Note-taking, exam techniques, time management, memory/concentration aids. Study methods for higher level reading and writing coursework. May be repeated once.

No graduation credit.

Repeatable for credit

1 unit

EDSE 084A. Learning Assistance Program Lab

Laboratory instruction for comprehension, vocabulary, reading in content fields, study skills, spelling, speed reading.

Lab 3 hours.

No graduation credit.

Repeatable for credit

No Degree Credit

1 unit

UPPER DIVISION

EDSE 101. Introduction to Exceptional Individuals

Identification, etiology and description of exceptional and handicapped individuals. Educational, vocational, economic and societal considerations.

Perequisite: Upper division standing or instructor consent.

3 units

EDSE 101B. Observation and Practicum with Exceptional People

Observation and participation in programs serving exceptional individuals; concurrent seminars one hour per week. Provides range of guided field experience for careers related to serving disabled individuals.

Pre/Corequisite: EDSE 101.

Repeatable for credit

Credit / No Credit

1-3 units

EDSE 102. Language and Speech for the Normal and Exceptional Individuals

Developmental levels of speech, language, and communicative competence. Dialectal variations. Second language acquisition. Communication disorders. Language assessment and development.

Perequisite: Upper division standing or instructor consent.

3 units

EDSE 103. Disability and Society

Explores influences of disability upon human experience in socio-political, and economic contexts.

Perequisite: Completion of Core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: S

3 units

EDSE 104. Atypical Development in Young Children

Historical and philosophical background of intervention theories of learning related to young children with high risk development. Skills and techniques to promote optimal environments and appropriate methods for early intervention and stimulation of young children with special needs.

Perequisite: CD 60 (or equivalent).

Activity 8 hours.

Repeatable for credit

3 units

EDSE 105. Supervision and Induction Plan Evaluation

Supervised observation, support and feedback for new special education teachers and evaluation of the induction plan.

Perequisite: Completion of Level I or instructor consent.

Credit / No Credit

6 units

EDSE 107. Educating Students with Mild to Severe Disabilities

Broad aspects of learning, emotional and management problems of students with mild/moderate and severe disabilities including specific learning characteristics, assessment and individual educational programming.

Prerequisite: Upper division standing.
Pre/Corequisite: EDSE 101.

3 units

EDSE 108. Assessment and Evaluation: Atypical Young Children

Identification, description and assessment of atypical children ages birth through 8 years. Introduction to early intervention and collaboration.

Prerequisite: Upper division standing or instructor consent.
Activity 8 hours
4 units

EDSE 115. Introduction to Deaf Culture

Cultural point of view as alternative to pathological model, with exploration of language, self-image, culture, arts.

Prerequisite: Upper division standing.
3 units

EDSE 118. Advanced Theory and Practice in Classroom Manual Communication

Examination of the theories, principles and practices in classroom use of American Sign Language and Signing Exact English. Proficiency in the explanation and use of these principles and knowledge of signs.

3 units

EDSE 119. Introduction to Education of Deaf and Hard of Hearing Students

Characteristics of deaf and hard of hearing students. Historical, cultural, educational and linguistic aspects. Introduction to teaching and training techniques for deaf and hard of hearing students.

Prerequisite: Upper division standing, EDSE 101 or instructor consent.
3 units

EDSE 153. Student Teaching – Severe Disabilities

Practical experience teaching students with moderate to severe disabilities.

Prerequisite: Upper division standing and instructor consent.
Weekly seminar required.
Credit / No Credit
8 units

EDSE 154. Practicum and Student Teaching in Special Education

Field-based course to measure competency in a special education setting.

Prerequisite: Upper division standing and instructor consent.
Repeatable for credit
Credit / No Credit
3-8 units

EDSE 178. Observation and Practicum with Deaf and Hard of Hearing Youth

Supervised observation and practicum with deaf and hard of hearing students in educational settings and at different grade levels.

Prerequisite: Admission to credential program and instructor consent.
Repeatable for credit
Credit / No Credit
3-6 units

EDSE 180. Individual Studies

Supervised study of a specific problem or topic.

Prerequisite: Upper division standing and instructor consent.
Repeatable for credit
Credit / No Credit
1-4 units

EDSE 192. Mainstreaming the Exceptional Pupil

Exploration of laws, service delivery systems, instructional methods and assessment processes to support inclusion of students with disabilities in regular education environments.

Prerequisite: Upper division standing or instructor consent.
1-3 units

GRADUATE

EDSE 202. Science for the Inclusive Classroom

Analysis and application of concepts and themes in science curriculum and instruction for the elementary student, with particular attention given to the needs of diverse populations, especially those with disabilities.

Prerequisite: EDEL 102 and EDSE 192.
4 units

EDSE 203. Mathematics for the Inclusive Classroom

Analysis and application of concepts and themes in mathematics curriculum and instruction for the elementary student, with particular attention given to the needs of diverse populations, especially those with disabilities.

Prerequisite: EDEL 102, EDEL 103 and EDSE 192.
4 units

EDSE 204. Reading/Language Arts for the Inclusive Classroom

Study of the nature of language/literacy and its acquisition as appropriate for elementary students, with particular attention given to the needs of second language learners and students with disabilities.

Prerequisite: EDEL 102, EDEL 103 and EDSE 192.
8 units

EDSE 205. Social Studies for the Inclusive Classroom

Analysis and application of concepts and themes in social studies curriculum and instruction for the elementary student, with particular attention given to the needs of diverse populations, especially those with disabilities.

Prerequisite: EDEL 102, EDEL 103, and EDSE 192.
4 units

EDSE 206. Assessment Curriculum and Instructional Strategies for Students with Moderate to Severe Disabilities

Educational theories and best practice techniques for the education of students with moderate to severe disabilities including assessment, curricular areas, and instructional strategies.

Prerequisite: EDSE 101, EDSE 102 and EDSE 107.
3 units

EDSE 209. Educating Students with Emotional Disorders

Identification of students with emotional disorders, effective models of instruction, educational theories, teaching strategies and positive behavior support.

Prerequisite: EDSE 101, EDSE 102, EDSE 108 and EDSE 179.

Corequisite: EDSE 105 or instructor consent.
3 units

EDSE 213. Curricular and Instructional Adaptations for Teaching Students with Moderate to Severe Disabilities

Strategies for the education of students with moderate to severe disabilities including adapting and modifying curriculum and designing instruction in natural environments.

Prerequisite: EDSE 106.
3 units

EDSE 214. Augmentative and Alternative Communication Strategies for Persons with Severe Disabilities

The use of augmentative and alternative communication devices and strategies for assessing and instructing individuals with disabilities in home, school and community settings.

3 units

EDSE 215. Assessment And Evaluation of Individuals with Mild/Moderate Disabilities

Formal and non-formal evaluation methods to assess students with mild/moderate disabilities for first and second language learners. Includes standardized and alternative assessment, tools and practices, case studies, report development, and a comprehensive understanding of related research.

Prerequisite: EDSE 107.
3 units

EDSE 216. Teaching Reading and Language Arts to Students with Mild/Moderate Disabilities

Language arts curriculum strategies and materials for the exceptional individual, stressing reading, written and verbal communication and cognitive skills.

3 units

EDSE 217A. Directed Teaching I

Supervised teaching experience in educational settings for students with mild to moderate disabilities. Concurrent seminar.

Prerequisite: Prior student teaching experience and departmental approval.
Credit / No Credit
6 units

EDSE 217B. Directed Teaching II

Supervised teaching experience in educational settings for students with mild to moderate disabilities. Concurrent seminar.

Prerequisite: Completion of prescribed credential program including EDSE 217A and departmental approval.
Credit / No Credit
6 units

EDSE 218. Evidence-Based Best Practices for Students with Autism Spectrum

Theoretical foundations and application of evidence-based best practices for students with autism spectrum disorders including social language, social stories, integrated playgroups, positive behavior support, self-advocacy skills, inclusive education, recreation and leisure, and special interventions for young children.

Repeatable for credit
3 units

EDSE 220. Research Seminar on Exceptional Individuals

Applied research or projects in the field of special education.

Prerequisite: Grade of "B" or higher in EDSE 231 or instructor consent.
Repeatable for credit
3 units

EDSE 221. Intervention for Young Children with Disabilities and Delays

Intervention strategies for young children with special needs; theory and design of content; linkage between assessment, intervention and evaluation; inclusion of motor, adaptive, cognitive communication and social skills development; attention to multicultural/linguistic considerations. When content changes may be repeated.

Repeatable for credit

4 units

EDSE 222. Transition and Transition Planning

An overview of the transition planning for students in special education. Topics include: career development, legislation, vocational assessment, career planning in IEPs, home, parent and community involvement, vocational training models, evaluation of students, transition planning, self determination and advocacy.

Prerequisite: Instructor consent.

Repeatable for credit

3 units

EDSE 224. Methodologies for Second Language Learners in Special Education Programs

Examines the unique considerations, legislation, and approaches to working with culturally and linguistically diverse students with special education needs.

Repeatable for credit

1-3 units

EDSE 225. Strategies in Career/Vocational Education for Exceptional Individuals

Content includes: curriculum and instructional methodology for career/vocational education for the handicapped student in classroom settings; employability training and placement for learning handicapped; community-based training for severely handicapped.

Prerequisite: Instructor consent.

1-3 units

EDSE 226. Learning Strategies for Secondary Students with Mild/Moderate Disabilities

Theory, research and practice in the implementation of a learning strategies curriculum for secondary learning handicapped students.

Prerequisite: Graduate standing and instructor consent.

3 units

EDSE 227. Cross-Cultural Factors in Intervention of Developmentally Delayed Young Children

Examines the unique considerations and approaches to working with culturally and/or linguistically diverse families whose children have special needs.

3 units

EDSE 228. Collaboration and Consultation in Special Education

Competencies required for collaboration, consultation and counseling with parents, professionals and students with special needs.

3 units

EDSE 229. Transdisciplinary, Service Coordination Issues and Practices in Early Intervention

Theory and practice in transdisciplinary family-centered services for young children ages birth to 8 years with special needs. Study of social services, health services and educational service delivery systems and interagency collaboration in relation to the Individual Family Service Plan and the IEP.

Prerequisite: EDSE 104.

3 units

EDSE 230. Advanced Curriculum and Instruction for Individuals with Mild/Moderate Disabilities.

Emphasis on aligning curriculum with California and district's content standards. Research-based best practices for academic success of all learners. Applications to support English learners.

Prerequisite: Graduate standing and preliminary credential.

3 units

EDSE 231. Issues and Research in Special Education

Evaluation of research on characteristics and methods of identification of individuals with disabilities; including minority and underachieving students. Current funding issues, research models, research on individuals with disabilities and instructional organization are reviewed and analyzed.

Prerequisite: Grade of "B" or higher in EDSE 285 or instructor consent.

Repeatable for credit

3 units

EDSE 232. Theoretical Systems of Instruction for Individuals with Reading Disorders

Theory and evaluation of methods and models for instruction of reading in grades K-3 for individuals with disabilities.

Prerequisite: Instructor consent.

Repeatable for credit

3 units

EDSE 233. Advanced Reading Comprehension Skills for Learners with Disabilities

Study and analysis of creative models for enhancing reading comprehension skills of individuals with disabilities.

Prerequisite: Instructor consent.

3 units

EDSE 234. Advanced Fieldwork in Special Education

Application of knowledge and skills in classrooms. Examination of ethical practices, work with parents, challenges in application, and professional growth.

Prerequisite: Instructor consent.

Repeatable for credit

Credit / No Credit

6 units

EDSE 235. Characteristics, Implication, and Adaptation for Students with Multiple Disabilities

Specialized health care for students with severe disabilities; genetic disorders, classroom first aid, role of physical and occupational therapist, speech and language, vision and adaptive physical education specialist.

Prerequisite: EDSE 102, EDSP 110, EDSP 111, EDSP 113 or instructor consent.

Repeatable for credit

3 units

EDSE 241. Emerging Technology for All Learners

Effective use of the computer to meet exceptional learning needs, including special education software evaluation, word processing for written language development, logo, individualized lessons with graphics and speech and database management for cognitive and language development.

Perequisite: Microcomputer literacy.

Repeatable for credit

1-3 units

EDSE 242. Microcomputers in Special Education Program Management

Application of microcomputer programs to classroom and program activities including planning, monitoring, recording, scoring, filing, budgeting, word processing, resource storing and projecting trends.

Perequisite: Microcomputer literacy.

Repeatable for credit

3 units

EDSE 243. Cooperative Learning Strategies for Mainstreaming

Cooperative learning strategies for structuring the interaction of regular and exceptional students and organizing the curriculum for maximum learning. Theoretical background, research analysis and practical applications of cooperative learning.

3 units

EDSE 245. Transition and Vocational Rehabilitation

Individualized transition planning and coordination, program development, program models, interagency collaboration, school, community and parent involvement; present and future trends and issues in adult services.

Perequisite: Graduate level standing.

Repeatable for credit

1-3 units

EDSE 276A. English Skills for Deaf and Hard of Hearing Students

Theories of language development with deaf and hard-of-hearing students. Overview of English sentence structures, survey of curricula and teaching methods, with application and analysis of techniques for different age levels.

Perequisite: EDSE 102.

3 units

EDSE 276B. English Skills Assessment for Deaf and Hard of Hearing Students

Advanced study of pedagogy, assessment, curricular theories and instructional strategies appropriate for deaf and hard of hearing students.

Perequisite: EDSE 276A

3 units

EDSE 276C. Speech and Auditory Development for Deaf and Hard of Hearing Students

Evaluating, implementing and facilitating speech development in deaf and hard of hearing youth. Practical preparation in use and care of hearing aids and amplification systems. Includes techniques for educating parents on topics pertaining to speech and auditory habilitation.

Perequisite: EDSE 102.

3 units

EDSE 277. Principles of Curriculum and Instruction for Deaf and Hard of Hearing Students

Advanced study of the pedagogy, assessment, curricular theories and instruction strategies appropriate for deaf and hard of hearing students.

Prerequisite: Graduate standing, EDEL 108A and EDEL 108D.
4 units

EDSE 279. Managing Behavior and Emotional Problems of Students in Special Education

Introduction to the application of various management approaches to individual and group instruction of exceptional individuals.

Prerequisite: Graduate standing or instructor consent.
Repeatable for credit
3 units

EDSE 281. Student Teaching with Deaf and Hard of Hearing Students

Classroom teaching with hearing impaired students in an educational setting under supervision of the instructor.

Prerequisite: Completion of all CH course work, satisfaction of communication skills evaluation requirements and instructor consent.
Repeatable for credit
Credit / No Credit
4-10 units

EDSE 285. Seminar on Issues Related to Teaching Exceptional Individuals

Issues, trends and research in educating handicapped students.

Prerequisite: Instructor consent.
Repeatable for credit
3 units

EDSE 287. Resource Specialist in Special Education

This course enables the student to provide assistance in implementation of laws related to exceptional individuals, consultancy and program management. Students also learn strategies for providing parent education, staff development, in-service training and coordination of services.

Prerequisite: Specialist credential and instructor consent.
Repeatable for credit
1-3 units

EDSE 298. Special Studies

Supervised study in a specific field of special education; to be taken only with the consent of the division head.

Repeatable for credit
Credit / No Credit
1-3 units

EDSE 299. Master's Thesis

Supervised thesis in the field of special education, to be taken only with chair consent.

Prerequisite: Admission to candidacy for the master's degree; EDLD 221.
Repeatable for credit
Credit/No Credit/Report in Progress
3 units

Electrical Engineering

College of Engineering

Engineering 349
408-924-3950

Professors

Tri Caohuu
Ray R. Chen
Sun H. Chiao
Chang Choo
James J. Freeman
Lili He
Ping Hsu, Associate Dean
Jack H. Kurzweil
Thuy Le, Undergraduate Coordinator
Essam Marouf
Nader Mir
Gene Moriarty
Masoud Mostafavi
Evangelos Moustakas
Peter Reischl, Graduate Coordinator
Avtar Singh, Chair
Udo J. Strasilla
Belle Wei, Dean

Associate Professors

Robert Morelos-Zaragoza
David Parent
Jalel Rejeb

Assistant Professors

Sotoudeh Hamed-Hagh
Birsen Sirkeci

Curricula

- BS, Electrical Engineering
- MS, Electrical Engineering

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 undergraduate curriculum is accredited by the Accreditation Board for Engineering and Technology (ABET). 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:

- Understanding of the Fundamentals: Graduates will demonstrate an understanding of the fundamentals of Electrical Engineering, including its mathematical and scientific principles, analysis and design.
- Understanding the Practical Applications of Engineering: Graduates will demonstrate effective oral and written communication, teamwork and leadership.
- Professional: Graduates will demonstrate a professional and ethical attitude with continued intellectual flexibility and capacity for advancement.

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 coursework 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.

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	73
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	42
EE 101, EE 102, EE 110, EE 112, EE 118, EE 120, EE 122, EE 124, EE 128, EE 140, EE 142, 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	135

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

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	9
EE 210, EE 221 and EE 250		
Area of Specialization	9
Options	12
Project/Thesis Option	12
Approved electives (6); EE 297A (MS Project Proposal) (3); EE 297B (MS Project) (3) or EE 299A (Thesis Proposal) (3); EE 299B (Thesis) (3)		
Courses Only Option	12
Approved electives (12); Comprehensive exam (0)		
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 Studies and Research website at www.sjsu.edu/gradstudies.

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.

Courses

ELECTRICAL ENGINEERING

LOWER DIVISION

EE 097. Introductory Electrical Engineering Laboratory

Basic instruments and experimental techniques in electrical engineering. Oscilloscopes, function generators, frequency counters and multiple-use meters. Measurements of voltage, current, frequency response, transient response and computer simulation of circuits.

Pre/Corequisite: EE 98.

Lab 3 hours.

1 unit

EE 098. Introduction to Circuit Analysis

Circuit laws and nomenclature, resistive circuits with DC sources, ideal operational amplifier, controlled sources, natural and complete response of simple circuits, steady-state sinusoidal analysis and power calculations.

Prerequisites: ENGR 10 and PHYS 51 or PHYS 71.

Corequisite: MATH 133A or MATH 123.

CAN ENGR12

3 units

UPPER DIVISION

EE 101. Circuits Concepts and Problem Solving

Development of skill and proficiency in solving electric circuit, calculus, and differential equation problems; techniques for analyzing DC circuits, AC circuits, and transients. Well prepared students should consider credit by examination for this course.

Prerequisite: EE 98 (with a grade of "C" or better). Activity 2 hours.

Repeatable for credit

Credit / No Credit

1 unit

EE 102. Probability and Statistics in Electrical Engineering

Discrete probability theory. Theory of one and two random variables. Elementary statistics and hypothesis testing. EE Applications.

Prerequisite: EE 112 with a grade of "C" or better. 3 units

EE 104. Numerical Methods in Electrical Engineering

Review of matrix algebra. Solution of linear equations. Eigen value and Eigen vector problems. Solution of nonlinear equations. Interpolation. Numerical integration. Numerical solution of ordinary differential equations. Approximation of functions. Emphasis on electrical engineering applications of numerical methods.

Prerequisite: EE 110, EE 118 and EE 140 (with grades of "C" or better).

3 units

EE 105. Electronics and Microprocessor Applications

Introduction to microprocessor, hardware interfacing, A/D and D/A converters and data acquisition. Microprocessor assembly language and programming. Motors, sensors, actuators and microcontrollers. Emphasis on hardware interfacing and design with microprocessors. Not open to EE majors.

Prerequisite: EE 98.

Lecture 2 hours/lab 3 hours.

3 units

EE 106. Fundamentals of Mechatronics Engineering

See ME 106.

3 units

EE 110. Network Analysis

Mutual inductance, series/parallel resonance. Step and impulse responses. System functions. Poles and zeros, convolution. Bode plots. Laplace Transform applications to circuit analysis.

Prerequisite: EE 98 (with grade of "C" or better), MATH 133A, EE 101, ENGL 1A.

3 units

EE 112. Linear Systems

Advanced study of linear discrete and continuous systems. Laplace transforms and Z transforms. Convolution. System functions and frequency response. Fourier series and Fourier transforms. Discrete and fast Fourier transforms.

Prerequisite: EE 98 (with grade of "C" or better), Math 133A, EE 101.

3 units

EE 118. Digital Design I

Boolean algebra and number systems. Combinational and sequential circuits. Realization of logic blocks with standard integrated circuit packages. Design of counters, dividers, registers, arithmetic logic units and algorithmic state machines.

Prerequisite: EE 98 (with grade of "C" or better), MATH 133A, ENGL 1A.

Lecture 3 hours/lab 3 hours.

4 units

EE 120. Digital Design II

Advanced algorithmic processes using MSI andSSI integrated circuits. Organization and interface requirements for a micro-computer. Hardware-software tradeoffs in digital systems.

Prerequisite: EE 118 with grade of "C" or better. Lecture 3 hours/lab 3 hours.

4 units

EE 122. Electronic Design I

Active device equivalent circuits with emphasis on transistors, elementary switching circuits, small-signal amplifier analysis and design and operational amplifiers. Computer simulation.

Prerequisite: EE 110 with grade of "C" or better, EE 97.

Lecture 3 hours/lab 3 hours.

4 units

EE 124. Electronic Design II

Integrated circuit amplifiers. Amplifiers with feedback. Frequency response. CAE and CAD

Prerequisite: Submission of major form; ENGR 100W, EE 122 and EE 128 (with grade of "C" or better).

Lecture 3 hours/lab 3 hour.

4 units

EE 125. Analog CMOS Integrated Circuits

Analysis and design of analog CMOS integrated circuits. Voltage references, noise analysis, amplifiers and comparators, sample-and-hold circuits, switched-capacitor circuits and converters.

Prerequisite: EE 124.

3 units

EE 128. Physical Electronics

Review of semiconductor theory. Methods of device fabrication; p-n junctions; bipolar junction transistors; field-effect transistors (FETs); MOSFETs; and equivalent circuits.

Prerequisite: MATE 153.

Lecture 3 hours.

3 units

EE 129. Introduction to Integrated Circuits Processing and Design

See MATE 129.

3 units

EE 130. Electromechanics

Magnetic circuits, force calculations, transformers, voice coil motors, DC motors and generators, step motors and brushless DC motors.

Prerequisite: Submission of major form; EE 110 and EE 140.

Lecture 3 hours.

3 units

EE 132. Theory of Automatic Controls

Theory of linear feedback control systems. Transfer functions and block diagrams; root-locus techniques; frequency analysis techniques; compensation; transducers and servo-system elements.

Prerequisite: Submission of major form; EE 112 (with grade of "C" or better).

3 units

EE 136. Semiconductor Power Electronics

Study of power electronic circuits and applications including switch-mode regulators, AC-DC, DC-DC and DC-AC conversion, uninterruptible power supplies, variable speed drives, active filtering and harmonic cancellation; laboratory demonstrations. Applications include electric vehicle propulsion and spacecraft power systems.

Prerequisite: EE 124.

3 units

EE 138. Introduction to Embedded Control System Design

Embedded system design challenge and metrics. Processor and IC technologies. Software and hardware architectures for ESD. Design flow and tools. The design of standard peripherals, microcontrollers, single-purpose and general-purpose processors. Basic concepts of interfacing and communication protocols in ESD.

Prerequisite: EE 120.

3 units

EE 140. Principles of Electromagnetic Fields

Static electric and magnetic fields using vector calculus methods. Development of Maxwell's Equations.

Prerequisite: PHYS 52 or PHYS 72, EE 98 (with grade of "C" or better), MATH 133A, ENGL 1A.

3 units

EE 142. Fields and Waves

Application of Maxwell's Equations to time-varying electric and magnetic fields. Plane waves, transmission lines, waveguides and antennas.

Prerequisite: EE 140 with grade of "C" or better.

3 units

EE 153. Introduction to Digital Signal Processing

Digital signal processing fundamentals, discrete system theory, convolution, DFT, and design of IIR and FIR filters. MATLAB based lab exercises are used for verification of DSP principles, signal analysis, and design of filters for audio signals.

Prerequisite: EE 112.

3 units

EE 160. Digital and Analog Communications Systems

Amplitude and frequency modulation; pulse code modulation for digital telephony; baseband and bandpass digital modulation techniques; the digital transmission hierarchy, modems for the telephone line, microwave links, coaxial cable, and satellite transmission; ISDN and xDSL data transmission.

Prerequisite: EE 112, EE 102.

3 units

EE 161. Principles of Communication Engineering

Transmission of signals through linear systems; time-bandwidth requirements. Analog communications; amplitude modulation and demodulation; angle modulation and demodulation. Digital communication. Phase-locked loops.

Prerequisite: EE 112.

Lecture 2 hours/lab 3 hours.

3 units

EE 164. Fiber Optic Communication

Fiber optic systems components (cables, sources, detectors, and transmitters); systems transmission noise and reliability; system design (specifications, limitations, components). Design project.

Prerequisite: EE 128.

3 units

EE 166. Design of CMOS Digital Integrated Circuits

Analysis and design of MOS based combinational sequential digital integrated circuits. Industry standard CAD tools (Cadence) will be used extensively in homework and a group final project.

Prerequisite: EE 128.

3 units

EE 167. Microelectronics Manufacturing Methods

CMOS manufacturing methods; advanced processing for integrated circuits. Analysis of yield, statistical process control and design of experiments as applied to process design, integration and characterization.

Prerequisite: MATE 129 and EE 128.

Lecture 2 hours/lab 3 hours.

3 units

EE 169. Microelectromechanical Systems Fabrication and Design

See ME 169.

3 units

EE 172. Microwaves

Introduction to microwave engineering and techniques. Transmission lines and waveguides, microwave network analysis, impedance matching and tuning. Resonators, dividers, couplers.

Prerequisite: EE 142.

3 units

EE 173. Active Microwave Circuit Design

Active microwave circuits. Microwave amplifier and oscillator circuits. BJT, MESFET/PHEMT devices introduced. Introduction to microwave systems.

Prerequisite: EE 172.

3 units

EE 174. Operational Amplifiers

Voltage amplifiers, converters, oscillators, filters, active filters, integrated circuits and subsystems, gain and bandwidth, design examples.

Prerequisite: EE 122.

3 units

EE 175. Filter Design: Passive, Active and Switched-Capacitor

Design of passive, active and switched-capacitor filters. Computer-aided design of filters and computer simulation of switched-capacitor structures. Fundamentals of digital filters and application to exact design of switched-capacitor filters.

Prerequisites: EE 112, EE 122.

3 units

EE 176. Computer Organization

Design of instruction sets, addressing modes and memory management. Data and control paths of the CPU. Microprogramming. Arithmetic units and I/O organization.

Prerequisite: EE 120.

3 units

EE 177. Digital System Interfacing

System hardware and software; Bus design and timing, processor and local buses, bridge and bus hierarchy, fault-tolerant; Parallel, serial, and internet communication, RS232, USB, SATA, GPIB, PCI, SCSI; A/D and D/A; System design process, design entry, signal integrity, PCB testing.

Prerequisite: EE 120.

3 units

EE 178. Digital Design with FPGAs

Advanced Digital Design Technologies as they relate to synchronous digital systems. Requires student design projects that deal with the use of CAD tools for the Design, Simulation, and Implementation of Systems with FPGAs.

Prerequisite: EE 118.

3 units

EE 179. Digital Design Using Hardware Description Languages

Basic constructs of Verilog/VHDL; modeling techniques; chip-level and system level design. Compilation, simulation, source-level debugging, and synthesis. Design exercises and major project carried out in open lab.

Prerequisite: EE 118.

Lecture 2 hours/lab 3 hours.

Repeatable for credit

3 units

EE 180. Individual Studies

Individual work on special topics by arrangement.

Prerequisite: Senior standing.

Repeatable for credit

Credit / No Credit

1-3 units

EE 181. Fundamentals of Internetworking

Data communication concepts, protocols, algorithms; 7-layer OSI reference model and implementations; physical media (fiber, wire); switching systems; LAN architectures and components, Ethernet, FDDI, TCP/IP, and related standards.

Prerequisite: EE 102, EE 120.

3 units

EE 182. Electronics Test Design Engineering I

Introduction to Test Design Engineering; Basic IC and Component measurements; Measurement accuracy, Correction, and Calibration; DSP based testing; Design for Test; Laboratory Bench test development and execution.

Prerequisite: EE 122.

Lecture 2 hours/lab 3 hours.

3 units

EE 183. Electronics Test Design Engineering II

Best practices in Test methods and techniques; ATE Test hardware/software, Device characterization; Multi-system reliability; Device interface board design, building, debug; ATE development and Execution.

Prerequisite: EE 182.

Lecture 2 hours/lab 3 hours.

3 units

EE 189. Special Topics in Electrical Engineering

Advanced topics in Electrical Engineering. Content varies from semester to semester.

Prerequisite: Instructor consent/senior standing.
Repeatable for credit
3 units

EE 197. Cooperative Education Project

See ENGR 197.

3 units

EE 198A. Senior Design Project I

Individual or group design project proposal and initial design in approved EE area; oral and written reports; professional seminar.

Prerequisite: ENGR 100W (with a "C" or better) and instructor consent; approved major form on file.
Lab 3 hours.
1 unit

EE 198B. Senior Design Project II

Implementation of individual or group design projects initiated in EE 198A. Oral and written reports.

Prerequisite: EE 198A (with grade of "C" or better).
Lab 9 hours.
3 units

GRADUATE

EE 210. Linear System Theory

Continuous and discrete convolution and correlation. Review of transform theory. Two-side transforms including continuous and discrete Fourier transforms. Continuous and discrete state variable theory. Applications and computer simulations.

Prerequisite: Graduate standing.
3 units

EE 211. Network Analysis and Synthesis

Basic methods for synthesizing passive one-port and two-port networks. Review of analysis methods and mathematical tools; LC, RC input impedance synthesis; two-port synthesis; properties of second-order systems; sensitivities; operational-amplifier considerations.

Prerequisite: EE 112.
Lecture 2 hours/lab 3 hours.
3 units

EE 212. Active Network Synthesis

Active network synthesis. Advanced and specialized techniques of analysis, synthesis and approximation; consideration of recent developments in the field.

Prerequisite: EE 211.
3 units

EE 220. Radio Frequency Integrated Circuit Design I (RFIC Design I)

Study of transmitter and receiver architectures and their building blocks for modern wireless communication standards, high frequency modeling of passive and active circuit components realized in CMOS and BiCMOS technologies, networks theory, wideband matching, nonlinearity and noise link budgets.

Prerequisite: EE 124 or instructor consent.
3 units

EE 221. Semiconductor Devices I

Study of semiconductors in equilibrium and nonequilibrium conditions; principles of semiconductor device fabrication, p-n junctions; and junction transistors; device modeling for circuit analysis.

Prerequisite: Graduate standing.
3 units

EE 222. Semiconductor Devices II

Continuation of EE 221. MOS devices; short channel effects; Device Scaling; NMOS, CMOS and BiCMOS technologies; device modeling and simulation, memory cell design. Optoelectronic and microwave devices.

Prerequisite: EE 221.
Lecture 2 hours/lab 3 hours.
3 units

EE 223. Analog Integrated Circuits

Introduction to analog integrated circuits. Bipolar and MOS transistor models. Analysis and design of monolithic operational amplifiers. Frequency response. Feedback amplifier theory and design. Applications to specific case studies, such as phase-locked oscillators and wide-band amplifiers. Switched-capacitor filters.

Prerequisite: EE 221.
3 units

EE 224. High Speed CMOS Circuits

Analysis and design of digital integrated circuits; bipolar and MOS inverters and logic gates; semiconductor memories; gate arrays; standard cells; programmable logic array; computer-aided design; SPICE program will be used extensively.

Prerequisite: EE 221.
3 units

EE 225A. Analog IC Transistor Process Design

Advanced process design, fabrication and testing of transistors for analog integrated circuits, design of statistical process control procedures for yield management, industry standard TCAD tools (Synopsys) and IC fabrication equipment will be used extensively in lab.

Prerequisite: EE 221
3 units

EE 226. VLSI Technologies

CMOS/BiCMOS technologies for VLSI circuits; theoretical and practical aspects of individual fabrication steps; necessity of particular steps in order to achieve required device/circuit parameters; trade-offs in optimizing device performance; CMOS memory design projects.

Prerequisite: EE 221.
3 units

EE 227. Introduction to Large Scale MOS Design

Topics include: MOS transistor; switch and gate logic; programmable logic arrays; 2-phase dynamic design; finite state machines; scalable design rules; speed and power consideration; floor planning; MOS processing and design rules; layout techniques. Design and layout of MOS ICs using CAD tools.

Prerequisite: EE 224.
3 units

EE 228. Design Projects in VLSI Systems

Students must complete modest sized MOS projects through layouts, simulation and design rule checking. Topics include: design tools, logic simulation, placement, routing, floor planning, cell library, test pattern generation, and design for testability.

Prerequisite: EE 227.
3 units

EE 229. Advanced Topics in Microelectronics

Current topics in electronic devices, technology and design; applications to state of the art topics in the microelectronics area.

Prerequisite: EE 221 or instructor consent.
Repeatable for credit
3 units

EE 231. Automatic Control Theory

Fundamentals of state space techniques in the analysis and synthesis of dynamic control systems; relationship to classical control theory via the Laplace transform; controllability; observability; performance indices discrete systems; introduction to optimal control and Kalman filtering.

Prerequisite: EE 132.
3 units

EE 232. Sampled-Data Control Systems

Reconstruction of sampled systems. Root-locus analysis of sampled data control systems, the discrete compensation method and physical realization of discrete compensators. Statistical analysis and design of sampled data systems with emphasis on robotics applications.

Prerequisite: EE 231.
3 units

EE 233. Optimal Control Systems

Optimization of discrete and continuous systems with applications from aerospace, robotic and process control areas. Variational calculus, numerical solutions, dynamic programming and steepest descent algorithms. Optimal linear regulator problem, matrix Riccati equation and stochastic processes.

Prerequisite: EE 231.
3 units

EE 235. Nonlinear Control Systems Analysis

Linearized approximations, Polynomial approximations, phase plane analysis; numerical integration and describing function techniques of analysis and computer simulation.

Prerequisite: EE 112 and EE 231.
3 units

EE 239. Selected Topics in Systems and Control

Critical analysis of current literature pertinent to control systems.

Prerequisite: EE 231 and instructor consent.
3 units

EE 250. Probabilities, Random Variables and Stochastic Processes

Random variables, random processes, power spectral density, optimum linear systems, queuing theory.

Prerequisite: Graduate standing.
3 units

EE 251. Digital Data Transmission I

Review of random processes. Gaussian noise. Sampling, quantization and pulse transmission. Bandlimited channels and equalization. Signal space analysis. Digital modulation techniques. Tradeoffs between power and transmission rate.

Prerequisite: EE 250.
3 units

EE 252. Digital Data Transmission II

Digital modulation techniques for power and bandwidth limited communication systems. Offset QPSK, GMSK, noncoherent modulation and detection. Multipath fading channels, diversity and combining methods.

Prerequisite: EE 251.
3 units

EE 253. Digital Signal Processing I

Time/frequency analysis of discrete-time signals and systems. Fast implementations of the DFT and its relatives. IIR and FIR digital filter design, implementation and quantization error analysis. Decimation, interpolation and multirate processing.

Prerequisite: EE 210.
3 units

EE 254. Digital Signal Processing II

Optimal filtering of discrete-time noisy signals. LMS and RLS adaptive processing. Interference canceling. Linear prediction. Adaptive FIR and lattice implementation. Classical, model based, and eigen analysis spectral estimation. Dynamic power spectra and wavelets.

Prerequisite: EE 250 and EE 253.
3 units

EE 255. Wireless/Mobile Communications

Cellular mobile radio systems, propagation models, multipath propagation effects, diversity and combining noise, and interference are discussed. Analog and digital modulation techniques and their performance measures multiple access techniques such as FDMA, TDMA and CDMA are discussed.

Prerequisite: EE 142.
3 units

EE 256. Programmable DSP Architectures and Applications

Implementations of DSP algorithms using programmable DSP architectures. Internal architectural requirements for a DSP device, system level hardware/software design and applications of programmable DSP architectures.

Prerequisite: EE 210.
3 units

EE 257. Digital Communications Processing

Application of signal processing techniques to analysis and simulation of basic digital communication functions. Optimal filtering, digital modulation, optimal receivers in the presence of noise, carrier and symbol synchronization, ISI and channel equalization, adaptive implementation, digital beamforming.

Prerequisite: EE 210, EE 250.
3 units

EE 258. Neural Networks

Principles of neural networks. Basic neurophysiology, neural nets as finite-state machines, synaptic learning, perceptrons, the LMS and back propagation algorithms, capacity theorems, feedforward nets as statistical classifiers, stability of feedback nets, self-organizing feature maps, adaptive resonance theory, retinal and cochlear models.

Prerequisite: EE 210.
3 units

EE 259. Selected Topics in Signal Processing

Advanced topics in signal processing. Content varies from semester to semester.

Prerequisite: Instructor consent.
3 units

EE 263. Digital Image Processing

Fundamental principles and algorithms for digital image processing. Topics include image formation, modeling, transforms, enhancement, compression, segmentation, representation, feature extraction, and object recognition. Introduction to imaging system hardware components and architectures.

Prerequisite: EE 210.
3 units

EE 264. Computed Imaging

Fundamentals of the two-dimensional Fourier transform and its relatives. Application to selected problems in Imaging Transducer Arrays, Transform Image Coding, Spatial Filtering, Computed Tomography, Radar Imaging, Medical Imaging and Planetary Exploration.

Prerequisite: EE 112 or equivalent..
3 units

EE 270. Advanced Logic Design

Logic design theory, advanced logic minimization, design and analysis of sequential circuits, asynchronous circuit design, logic circuit testing and design for testability. Review Verilog/VHDL. CAD tools are used for design, modeling and simulation.

Prerequisite: Graduate standing.
3 units

EE 271. Digital System Design and Synthesis

In depth study of concepts and practices in modern digital system design, such as high-speed arithmetic, cache memory design, advanced pipelining and processor design. Verilog or VHDL is used for simulation and synthesis.

Prerequisite: EE 270.
3 units

EE 274. VLSI Design for Testability

Test generation methods for analog, digital logic, memories and microprocessors. Design to enhance testability of analog, digital, and mixed-signal circuits including data converters and frequency synthesizers. Built-in self test and built-in self repair. SOC testing.

Prerequisite: EE270
3 units

EE 275. Advanced Computer Architectures

Performance metrics, instruction set architectures, instruction pipelining and pipeline hazards, instruction-level parallelism, multithreading, cache and virtual memory, I/O performance and advanced topics in storage systems, topologies and hardware/software issues of interconnection networks.

Prerequisite: EE 270.
3 units

EE 276. Parallel Computer Systems

Advanced concepts in parallel computer architectures and algorithms. Cache memory for multiprocessor systems, multistage networks, pipelined vector processors, massive parallel processors, systolic arrays and array processors, parallel processing algorithms and time complexity analyses. Design project.

Prerequisite: EE 270.
3 units

EE 277. Fault Tolerant Digital Systems

Continuation of EE 275 with emphasis on error detection and correction, fault tolerance, non-numeric architecture and direct execution architecture of digital electronic systems.

Prerequisite: EE 120, EE 124 and EE 270.
3 units

EE 278. Digital Design for DSP/Communications

Digital Circuit Design for DSP and Communication Circuits; Applications include FIR Filters, FFT, Modulation, Error Detection/Correction Circuits, CDMA and Video Imaging; CAD/FPGA/MATLAB, and HDL are used throughout the course for modeling, simulation, and synthesis.

Prerequisite: EE 270, and EE 253 or equivalent.
3 units

EE 279. Special Topics in Digital Systems

Advanced topics in digital systems. Content varies from semester to semester.

Prerequisite: Instructor consent.
Repeatable for credit
3 units

EE 281. Internetworking

Network layers, packet networks, ATM, SONET, TCP/IP protocols, high-performance switches and routers, queuing theory, error detection coding, quality of service, multicast, IPv6.

Prerequisite: EE 210 and EE 250.
3 units

EE 282. Internet Security and Cryptography

Internet security principles, protocols and crypto hardware designs, private and public key cryptosystems, DES, RSA, and AES, GPF(p) and encryption engines, hash functions and digital signatures, authentication, key management and security assessments.

Prerequisite: EE 281 or equivalent.
3 units

EE 283. High Speed Communication Networking

Layers 1 and 2 of High Speed Networks: Hardware, Architecture, Traffic Characterization. Design/Analysis of High Speed Switches and Routers, Hardware design of Multicast Switches and networks; The impact of Delay Modeling, Bandwidth Allocation, Congestion control and compression on Hardware Design of Switches.

Prerequisite: EE 281.
3 units

EE 284. Convergent Voice and Data Networks

Network Convergence: Telecommunication standards, Evolution to IP network. Voice in telecommunications: transmission, switching, signaling. multimedia in data network: network requirements, QoS, coding signaling, inter-working. Transport in data network: protocols, voice over frame relay, ATM, IP; FAX. Broadband access network.

Prerequisite: EE 281.
3 units

EE 285. Fiber Optic Networking

Principles of photonic communication systems. Photonic components, optical fibers, detectors, sources, modulation methods, electrical interfaces, multiplexing strategies, optical-electronic-optical systems, all-optical systems, switches, routers, optical networking architectures.

Prerequisite: EE 164 and EE 221 or instructor consent.
3 units

EE 287. ASIC CMOS Design

CMOS ASIC design principles. Topics include ASIC architectures, cell libraries, synthesis issues, latches, clocking multiple clock synchronizers, delay calculation, timing closure, I/O specification, and testing.

Prerequisite: EE 270.
3 units

EE 289. Special Topics in Networking

Advanced topics in networking that are currently of high interest to both industry and academia. Content varies from semester to semester, and may include, but not limited to, network security, virtual private network, network availability and reliability, network management.

Repeatable for credit
3 units

EE 295. Technical Writing – Engineering Ethics

Students learn to analyze and write about issues in engineering ethics. Three types of ethics are explored: ethics of the person, the process, and the product.

Prerequisite: Graduate standing.
3 units

EE 297A. MSEE Project Proposal

Written project proposal development for research/design project, subsequently culminating the MSEE work in EE297B. An approved application for EE297A registration including project title and abstract, graduate seminar participation, oral proposal presentation and defense required.

Prerequisite: Competency in written English certification and admission to Candidacy for the Master's Degree.

3 units

EE 297B. MSEE Project

Implementation of the research/design project, culminating the MSEE work proposed in EE 297A. Formal Master's project report and its formal defense required.

Prerequisite: EE 297A

3 units

EE 298. Special Problems

Advanced individual work in electrical engineering.

Prerequisite: Graduate standing.

Repeatable for credit

Credit / No Credit

1-6 units

EE 298I. Electrical Engineering Internship**Experience**

For this course a student is employed in industry as an electrical engineering intern or in an equivalent position. The course supplements and supports student's plan of study.

Prerequisite: Graduate standing.

Repeatable for credit

Credit / No Credit

1-3 units

EE 299A. MSEE Thesis Proposal

Written Thesis proposal development for research/design, subsequently culminating the MSEE work in EE299B. An approved application for EE299A registration, including project title and abstract, graduate seminar participation, oral proposal presentation and defense required.

Prerequisite: Competency in written English certification and admission to Candidacy for the Master's Degree.

Credit/No Credit/Report in Progress

3 units

EE 299B. MSEE Thesis

Implementation of the research/design, culminating the MSEE work proposed in EE 297A. Formal Master's Thesis report and its formal defense required.

Prerequisite: EE 299A

Credit/No Credit/Report in Progress

3 units

Engineering – Preparation and Common Area Requirements

College of Engineering

Engineering 493

The College of Engineering includes both engineering and technology departments and programs. Engineering departments include Chemical and Materials; Civil and Environmental; Computer; Industrial and Systems; Electrical; Mechanical and Aerospace. Technology programs include Aviation and Industrial Technology. 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 minimal coursework:

- 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 coursework 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 coursework.

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. Coursework 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 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.

Scholarship Requirements

Scholarship 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

Courses in preparation for the major (mathematics through differential equations and lower division chemistry and physics) are not included in these GPA calculations. Some departments have additional grade requirements for individual courses, groups of courses and 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 post-baccalaureate unclassified standing cannot enroll in courses in the College of Engineering.

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:

- 10 units of calculus excluding differential equations
- 10-12 units of university level physics (with calculus as prerequisite)
- 5-8 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.

Semester Units

General Education Requirements30-33
Of the 51 units required by the university, 18-21 may be satisfied by specified major and support requirements. See the following section for more information.	
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 Education2
Mathematics13
<i>High school Analytic Geometry is prerequisite for the Math 30-31 sequence. Students without proper high school mathematics preparation will be required to take additional mathematics courses. See department advisors.</i>	
MATH 030, MATH 031, MATH 032 and MATH 133A	
Physics8-12
<i>Physics 72 is required for AE and EE students only.</i>	
PHYS 070, PHYS 071 and PHYS 072	
Chemistry5-10
CHEM 001A (5) or CHEM 001A and CHEM 001B (10)	
Engineering Common Area14-31
<i>Engr 10 is required for all engineering majors entering as freshmen.</i>	
The areas of Computers, Electrical, Graphical, Materials, Mechanics and Thermal/Fluid Sciences are considered the engineering common area. The College requires a minimum of four out of the six areas in all engineering programs for a minimum of 12 semester units. Individual departments may require more. See departmental program listings for specifics.	
Total Units Required72-101

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 Office Building 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

Assistant Professors

Adrienne Eastwood
Catherine Gabor
Katherine Harris
Cathleen Miller
Nicholas Taylor
Mary Warner

Curricula

- BA, English
- BA, English, Concentration in Career 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

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 with focus in Career and Technical writing as well as literary study. 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 English Society, the English Graduate Group, and the Student Society for Technical Communication. It is also home to the Steinbeck Fellows Program and to the Lurie Professor in Creative Writing, both annual appointments of distinguished writers who are in residence.

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, 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 24

ENGL 056A, ENGL 068A, ENGL 100W and ENGL 101 (12); ENGL 102 or ENGL 103 (3); ENGL 122, ENGL 123A, ENGL 123B, ENGL 123C, ENGL 123D or ENGL 125A (3); ENGL 144 and ENGL 193 (6)

Elective Requirements 24

Any eight 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

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 24

ENGL 056A, ENGL 068A, ENGL 100W and ENGL 101 (12); ENGL 102 or ENGL 103 (3); ENGL 123A, ENGL 123B, ENGL 123C, ENGL 123D or ENGL 125A (3); ENGL 144 and ENGL 193 (6)

Career-Writing Concentration 24

ENGL 071 or ENGL 135 (3); ENGL 106, ENGL 107 and ENGL 129 (9); four upper division English courses (12)

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, 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	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)
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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
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Requirements in the Major	51
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Core Requirements	39
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ENGL 056A, ENGL 068A, ENGL 100W, ENGL 101, ENGL 103, ENGL 109, ENGL 112B, ENGL 117, ENGL 122, ENGL 125A, ENGL 145, ENGL 169 and ENGL 193

Elective Requirements	12
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Any four courses from the following list (two lower division courses maximum): ENGL 056B, ENGL 68B, 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 161-168, ENGL 174, ENGL 182

Foreign Language Requirement	0-10
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One year of foreign language study at the college level or equivalency through examination

University Electives or Minor	12-22
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Total Units Required	120
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Minor – Literature

Semester Units

Six upper division literature courses.....	18
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Total Units Required.....	18
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Minor – Comparative Literature

Semester Units

CLIT 121 and CLIT 122.....	6
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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
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Minor – Creative Writing

Semester Units

Required Course	3
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ENGL 071

Creative Writing	12
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ENGL 130, ENGL 131, ENGL 133 and ENGL 135 may be taken twice for credit.

ENGL 130, ENGL 131 and ENGL 133 (9); ENGL 134 or ENGL 135 (3)

Literature	3
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ENGL 151, ENGL 166 or ENGL 176

Total Units Required.....	18
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Minor – Professional and Technical Writing

Semester Units

Core Courses	9
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ENGL 106, ENGL 107 and ENGL 129

Additional Requirements	9
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ENGL 199 (3); Two advisor-approved electives (6)

Total Units Required.....	18
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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 post-baccalaureate 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:

1. A minimum of 24 semester hours of acceptable undergraduate course work in English beyond freshman composition;
2. A 3.0 grade average in English courses;
3. Approval by the departmental graduate committee;
4. 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 Studies and Research website at www.sjsu.edu/gradstudies.
- 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.

Core Course	3
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ENGL 201 (to be taken as soon as possible after achieving classified standing)

Additional Courses	27
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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)

Total Units Required.....	30
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Master of Fine Arts in 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:

1. A minimum of 24 semester hours of acceptable undergraduate course work in the major beyond freshman composition;
2. A 3.0 grade point average in major courses;
3. Approval by the departmental MFA in Creative Writing Committee;
4. 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.

MFA – Creative Writing

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 39 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 Courses	6
ENGL 201C and ENGL 204		
Practicum	15
<i>All courses repeatable for credit.</i> Complete fifteen units from: ENGL 240, ENGL 241, ENGL 242		
Literary Research	15
Complete five courses from: ENGL 202, 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		
Professional Training	6
Complete six units from: ENGL 257, ENGL 259, ENGL 298		
Thesis/Capstone Requirement	6
<i>Creative project in candidate's emphasis area.</i> ENGL 299		
Total Units Required	48

Courses

COMPARATIVE LITERATURE

UPPER DIVISION

CLIT 121. Introduction to Comparative Literature

Critical approaches, reference sources, problems of translation.

Prerequisite: One year of college level foreign language or instructor consent.

3 units

CLIT 122. Topics in Comparative World Literature

An exemplary theme as treated in various literatures in different languages, e.g., war, love, freedom, religious experience. May be repeated when course content changes.

Prerequisite: One year of college level foreign language or instructor consent.

Repeatable for credit

3 units

CLIT 124. Literature and Religious Experience

See RELS 124.

Repeatable for credit

3 units

ENGLISH

LOWER DIVISION

ENGL 001A. Composition I

Expository writing, supplemented by critical reading.

Prerequisite: English Placement Test.

Repeatable for credit

ABC/No Credit

CAN ENGL 2

GE: A2

3 units

ENGL 001B. Composition 2

Continuation of expository writing, supplemented by critical reading and analysis of expository prose or literature.

Prerequisite: ENGL 1A and English Placement Test.

Repeatable for credit

ABC/No Credit

GE: C3

3 units

ENGL 007. Critical Thinking

Nature and meaning of critical thought, Western and non-Western. Relationship between logic and language. Examination of contrasting arguments on related subjects as a means for developing skill in analysis of prose.

Prerequisite: ENGL 1A.

GE: A3

3 units

ENGL 010. Great Works of Literature

Fiction, drama and poetry for non-English majors. Emphasis on critical appreciation of various literary forms.

No credit in the English major.

GE: C2

3 units

ENGL 022. Fantasy and Science Fiction

Students will examine works of literary fantasy and science fiction to understand them as expressions of human intellect and Imagination; to comprehend their historical and cultural contexts; and to recognize their diverse cultural traditions. Both contemporary and historical works will be studied.

No credit in the English major.

GE: C2

3 units

ENGL 040. Contemporary World Fiction

A study of selected works of fiction in English and in English translation written since 1975. The course both focuses on international texts that address significant themes of our time and explores ways of reading and understanding literature.

No credit in the English major.

GE: C2

3 units

ENGL 056A. English Literature to the Late 18th Century

Major literary movements, figures and genres from the Anglo-Saxon period through the eighteenth century. Works and writers may include Beowulf, Sir Gawain, Chaucer, Spenser, Sidney, Shakespeare, Donne, Milton, Dryden, Pope, Swift, Fielding, Johnson, Boswell.

CAN ENGL 8

3 units

ENGL 056B. English Literature Late 18th Century to Present

Major literary movements, figures and genres from the Romantic age to the present. Writers may include Austen, the Romantics, Tennyson, Browning, Arnold, Dickens, the Brontes, George Eliot, Hardy, Yeats, Joyce, Lawrence, Forster, Woolf, T.S. Eliot, Auden, Beckett.

CAN ENGL10

3 units

ENGL 068A. American Literature to 1865

Survey of American literature. Native American myths to Walt Whitman.

CAN ENGL14

3 units

ENGL 068B. American Literature 1865 to Present

Survey of American literature. Emily Dickinson to present.

CAN ENGL16

3 units

ENGL 071. Creative Writing

Examinations of works of poetry, creative nonfiction and short fiction as expression of human intellect and imagination, to comprehend the historic and cultural contexts, and recognize issues related to writing by men and women of diverse cultural traditions. Students will also write poetry, creative nonfiction, and a short fiction.

CAN ENGL 6

GE: C2

3 units

ENGL 078. Introduction to Shakespeare's Drama

Reading of five or six representative plays. The Elizabethan era, dynamics of performance and close analysis of the plays.

No credit in the English major.

GE: C2

3 units

UPPER DIVISION**ENGL 100W. Writing Workshop**

Advanced workshops in Reading and Composition.

Prerequisite: ENGL 1B (with a grade of C or better); Completion of Core GE, satisfaction of Writing Skills Test and upper division standing.

Required of all English majors before they achieve senior standing.

ABC/No Credit

GE: Z

3 units

ENGL 100WB. Written Communication: Business

Written communications for business majors; includes minimum of 8,000 words of writing spaced throughout the semester.

Prerequisites: English 1B (with a grade of C or better); completion of Core GE; satisfaction of Writing Skills Test and upper-division standing.

ABC/No Credit

GE: Z

3 units

ENGL 101. Introduction to Literary Criticism

Study and application of various historical and contemporary approaches to literature, such as formalism, structuralism, new criticism, cultural studies, new historicism, post-structuralism, Marxism, post-colonialism, feminism, etc. Application of these approaches to works of literature.

Prerequisite: ENGL 100W.

3 units

ENGL 102. History of the English Language

Course traces the development of the English language--its sounds, word forms, grammatical structures, vocabulary, and punctuation--from its origins as a dialect of the Germanic-speaking peoples to its status as a world language today.

Prerequisite: Upper division standing.

3 units

ENGL 103. Modern English

The growth and structure of modern English, including its phonology, morphology, syntax and semantics. Attention to social and regional varieties, with implications for language development and literacy among native and nonnative speakers.

Prerequisite: Upper division standing.

3 units

ENGL 105. Seminar in Advanced Composition

Advanced expository writing.

Prerequisite: Six units of lower division composition and completion of the Written Communication II requirement (ENGL100W). May be repeated once for credit with different instructor and department chair consent.

Repeatable for credit

3 units

ENGL 106. Editing for Writers

Copy editing, substantive editing and reorganization of technical documents. Review of grammar and punctuation to ensure technical mastery and ability to justify editing decisions. Graphics editing, access aids and professional skills of an editor.

Prerequisite: ENGL 1A and ENGL 1B.

Repeatable for credit

3 units

ENGL 118. Modern European Fiction

Representative European novels in English translation from the French, German, Scandinavian, Russian, Central European, Spanish and Italian.

ENGL 107. Professional Technical Writing

Research methods, audience analysis and development of reader-based writing techniques. Writing based on models from scientific and technical discourse.

Prerequisite: ENGL 1A and ENGL 1B.

3 units

ENGL 109. Writing and the Young Writer

Emphasis on workshop approach to improve creative and expository writing skills and to transfer knowledge gained as a writer into practice as a prospective teacher of writing.

3 units

ENGL 112A. Children's Literature

Study of literature for elementary and intermediate grades, representing a variety of cultures. Evaluation and selection of texts.

Prerequisite: Upper division standing.

3 units

ENGL 112B. Literature for Young Adults

Study of selected literary material, representing a variety of cultures, chosen to motivate secondary school readers.

Prerequisite: Upper division standing.

3 units

ENGL 113. Gothic Novel and Horror Fiction

Study of the gothic novel in Britain and America 1795-1900. Current trends in horror fiction and films will be traced to these gothic predecessors.

3 units

ENGL 114. Myth, Fantasy, and Science Fiction

A historically-based introduction to two of the most popular contemporary literary genres. Authors studied may include: Apuleius, Malory, More, Shelley, Wells, Carroll, Tolkien, Lewis, Williams, Clarke, Bradbury, Le Guin, Bradley, Stephenson, Butler and Delaney.

Prerequisite: Upper division standing.

3 units

ENGL 115. The Bible as Literature

Study of the Bible from the perspective of literature, examining key portions of the Bible, its subjects, themes, literary styles and genres, and contributions to Western Literature.

Prerequisite: Upper division standing.

3 units

ENGL 116. Myth in Literature

Relations between archetypes, artistic style and cultural context in masterworks, ancient through modern.

Prerequisite: Upper division standing.

3 units

ENGL 117. Film, Literature, and Cultures

Using films and literary works, students will appreciate and understand the narratives (myths and other stories) that create and define cultural identity, explore cultural interaction, and illustrate cultural preservation and cultural difference over time.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: V

3 units

ENGL 118. Modern European Fiction

Representative European novels in English translation from the French, German, Scandinavian, Russian, Central European, Spanish and Italian.

Prerequisite: Upper division standing.

3 units

ENGL 120. Theatre History

See TA 120.

Repeatable for credit

3 units

ENGL 121. Introduction to Comparative Literature

See CLIT 121.

3 units

ENGL 122. Topics in Comparative World Literature

See CLIT 122.

Repeatable for credit

3 units

ENGL 123A. Literature for Global Understanding – The Americas

Course promotes global understanding by examining the cultures and literary arts of a selected region of the world, the Americas, and covers representative texts and authors from Latin America and the Caribbean/West Indies.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: V

3 units

ENGL 123B. Literature for Global Understanding – Africa

Course promotes global understanding by examining the cultures and literary arts of a selected region of the world, Africa, and covers representative texts and authors from North Africa and Sub-Saharan Africa.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: V

3 units

ENGL 123C. Literature for Global Understanding – Oceania

Course promotes global understanding by examining the cultures and literary arts of a selected region of the world, Oceania, and covers representative texts and authors from Australia, New Zealand, and the Pacific Islands.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: V

3 units

ENGL 123D. Literature for Global Understanding – Asia

Course promotes global understanding by examining the cultures and literary arts of a selected region of the world, Asia, and covers representative texts and authors from a sub-region of Asia such as East Asia, South Asia, Southeast Asia, Central Asia, or West Asia/the Middle East.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: V

3 units

ENGL 124. Literature and Religious Experience

See RELS 124.

Repeatable for credit

3 units

ENGL 125A. European Literature: Homer to Dante

Classical and medieval literature in translation: Homer, Aeschylus, Sophocles, Euripides, Virgil and Dante.

Prerequisite: Upper division standing.
3 units

ENGL 126. Holocaust Literature

Survey of literature written by survivors or witnesses of the Holocaust, the destruction of European Jewry during World War II, focusing upon diaries, memoirs, fiction, and occasionally poetry and drama. Writers may include Elie Wiesel, Primo Levi, Anne Frank, Charlotte Delbo.

Prerequisite: Upper division standing.
3 units

ENGL 127. Contemporary Theatre

See TA 127.

GE: V

3 units

ENGL 128. Writing for the Stage

See TA 128.

Repeatable for credit

3 units

ENGL 129. Introduction to Career Writing

Practice in various professional writing tasks: instructions, descriptions, reviews, interviews, articles, creative nonfiction, short stories, poetry. Publication of a newsletter. Study of models and application of techniques to achieve given stylistic effects.

Prerequisite: Upper division standing.
3 units

ENGL 130. Writing Fiction

Workshop in short stories or other short fiction. Beginning the novel in individual cases. May be repeated once for credit.

Prerequisite: ENGL 71 (or equivalent) or instructor consent.

Repeatable for credit

3 units

ENGL 131. Writing Poetry

Workshop in verse forms. Study of traditional and contemporary models. May be repeated once for credit.

Prerequisite: ENGL 71 (or equivalent) or instructor consent.

Repeatable for credit

3 units

ENGL 133. Reed Magazine

Student-edited and managed literary magazine. Contents selected from local, national and international submissions. Students urged to work on the magazine for the two semesters required for publication. Open to all majors. May be repeated once for credit.

Prerequisite: Upper division standing.
Repeatable for credit

3 units

ENGL 134. Speech Writing

Writing speeches for others. Study of audience, language, persuasion, devices, style.

Prerequisite: ENGL 129 or instructor consent.
3 units

ENGL 135. Writing Nonfiction

Advanced creative writing workshop in literary nonfiction. Study of traditional and contemporary models. May be repeated once for credit.

Prerequisite: ENGL 71, ENGL 100W, ENGL 105, ENGL 129 or instructor consent.

Repeatable for credit

3 units

ENGL 137. Writing for Youth

Advanced creative writing workshop in children's fiction. Study of traditional and contemporary models.

Prerequisite: ENGL 71, ENGL 130, ENGL 131 or instructor consent.
3 units

ENGL 139. Visiting Authors

Study of works by contemporary writers participating in the Major Authors series and other programs sponsored by the Center for Literary Arts. Includes meetings with visiting authors and attending their various presentations. Required for the Creative Writing Concentration.

Prerequisite: Upper division standing.
3 units

ENGL 140A. Old English

Introduction to the language, with short selections for translation.

Prerequisite: Upper division standing.
3 units

ENGL 141. Medieval Literature

Middle English and continental literature, including such forms as the lyric, allegory, narrative, romance and biblically-based drama.

Prerequisite: Upper division standing.
3 units

ENGL 142. Chaucer

Chaucer's language and major poetic works. The Legend of Good Women, The Canterbury Tales and Troilus and Cressida.

Prerequisite: Upper division standing.
3 units

ENGL 143. The Age of Elizabeth

Poetry and prose of the early English Renaissance. Origin and development of English literary genres. Focus on Sidney and Spenser, lyric and narrative poetry of Shakespeare.

Prerequisite: Upper division standing.
3 units

ENGL 144. Shakespeare I

Major plays such as Twelfth Night, Henry IV, Part I and Hamlet.

Prerequisite: Upper division standing.
3 units

ENGL 145. Shakespeare and Performance

Course examines in depth several of Shakespeare's plays, specifically addressing issues of performance. We will discuss each play in the context of its original performance during Shakespeare's time and its life on stage and screen in the ensuing centuries.

Prerequisite: Upper division standing.
Repeatable for credit
3 units

ENGL 146. The Later English Renaissance

English poetic forms and prose styles from the accession of James I to the fall of the Commonwealth. Writers may include Donne, Bacon, Wroth, Lanyer, Browne and Marvell.

Prerequisite: Upper division standing.
3 units

ENGL 147. Milton

The man, the thinker, the revolutionary, the poet. English poems, major prose, selected modern criticism.

Prerequisite: Upper division standing.
3 units

ENGL 148. British Literature: 1660-1800

Major writers including Dryden, Behn, Swift, Pope and Johnson. With instructor consent may be repeated.

Prerequisite: Upper division standing.
Repeatable for credit
3 units

ENGL 149. The Romantic Period

Writers of English Romanticism such as Blake, Wordsworth, Coleridge, Byron, Shelley, Keats, Hazlitt, Lamb and DeQuincey.

Prerequisite: Upper division standing.
3 units

ENGL 150. The Victorian Age

Study of major authors and poets from 1832 to 1900, tracing changes in philosophy, religion, society and culture represented in their works.

Prerequisite: Upper division standing.
3 units

ENGL 151. Twentieth Century Poetry

Major British and American poets, including figures such as Yeats, Eliot, Pound, Frost, Auden, Stevens, Rich.

Prerequisite: Upper division standing.
3 units

ENGL 152A. English Drama to 1642

Drama and theater in the Middle Ages and Renaissance. Marlowe, Jonson, Webster and other contemporaries and successors of Shakespeare.

Prerequisite: Upper division standing.
3 units

ENGL 152B. English Drama from 1660

Masterpieces of Restoration and modern drama.

Prerequisite: Upper division standing.
Offered only occasionally.
3 units

ENGL 153A. Eighteenth Century British Novel

Study of the novel as a new literary form expressing psychological and sociological realities of the individual as hero/heroine in eighteenth century England. Authors may include Defoe, Richardson, Fielding, Smollett, Sterne, Burney and Austen.

Prerequisite: Upper division standing.
3 units

ENGL 153B. Nineteenth Century British Novel

Study of the novel through the early nineteenth century and into the early modern period. Novelists may include Shelley, Scott, Dickens, Thackeray, the Brontes, Eliot, Hardy and Conrad.

Prerequisite: Upper division standing.
3 units

ENGL 154. British and Irish Fiction Since 1900

Study of British and Irish fiction since 1900. Authors may include Conrad, Forster, Ford, Lawrence, Joyce, Woolf, Lessing, Greene, Fowles, Ishiguro, Byatt, Doyle, O'Brien.

Prerequisite: Upper division standing.
Repeatable for credit
3 units

ENGL 156. Black Women Writers: Race, Culture and Life Cycle in Cross-Cultural Perspective

See AFAM 156.

3 units

ENGL 161. American Literature to 1830

Major literary works of the Colonial, Revolutionary and post-Colonial periods. In addition to selected translations of non-English materials, readings may include Bradstreet, Wheatley, Rowson, Mather, Cooper, Taylor and Jefferson.

Prerequisite: Upper division standing.
3 units

ENGL 162. American Literature: 1830-1865

Writers may include Emerson, Douglass, Fuller, Hawthorne, Stowe, Thoreau, Melville and Whitman.

Prerequisite: Upper division standing.
3 units

ENGL 163. American Literature: 1865-1910

Rise of realism and the seeds of modernism. Writers may include Twain, James, Howells, Dickinson, DuBois, Dunbar, Dreiser, Wharton, Chesnutt and Chopin.

Prerequisite: Upper division standing.
3 units

ENGL 164. American Literature: 1910-1945

Writers may include Wright, Hurston, Cather, Eliot, Moore, Faulkner, William Carlos Williams and Gertrude Stein.

Prerequisite: Upper division standing.
3 units

ENGL 165. Topics in Ethnic American Literature

Focused study of a topic in ethnic American Literature, such as African American, Asian American, Latino American, or ethnic autobiography. Check schedule of classes for current offering.

Prerequisite: Upper division standing.
Repeatable for credit
3 units

ENGL 166. American Literature Since 1945

Major works of American literature since 1945, including writers such as Barth, Reed, Kingston, Lowell, Rich, Pynchon and Ozick.

Prerequisite: Upper division standing.
3 units

ENGL 167. Steinbeck

Major works of John Steinbeck. Use of Steinbeck Center for research.

Prerequisite: Upper division standing.
3 units

ENGL 168. The American Novel

Selected American novels from the Revolution to the present.

Prerequisite: Upper division standing.
3 units

ENGL 169. Ethnicity in American Literature

Study of race and ethnicity in the literary arts of North America. Selected works of authors from such groups as African Americans, European Americans, Asian Americans, Chicanos, Latinos and American Indians.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: S
3 units

ENGL 172. The Arts in U.S. Society

See CA 172.

GE: S
3 units

ENGL 173. Thinking About Contemporary World Arts

See CA 173.

GE: V
3 units

ENGL 174. Literature, Self, and Society

Study of literary works written throughout our national history in order to explore depictions of self, society, equality, and structured inequality. Writers and subject of the texts studied will represent a diversity of ethnic, class, gender, historical, and regional backgrounds.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: S
3 units

ENGL 176. The Short Story

Analysis and interpretation of selected short stories from the nineteenth century to the present.

Prerequisite: Upper division standing.
3 units

ENGL 177. Twentieth Century Fiction

Novels and short stories as works of art and as expressions of intellectual and social movements.

Prerequisite: Upper division standing.
3 units

ENGL 180. Individual Studies

By arrangement with instructor and department chair approval.

Prerequisite: Upper division standing.
Repeatable for credit
Credit / No Credit
1-3 units

ENGL 181. Special Topics in Literature

Significant topics or themes in literature. Focus will vary each semester.

Prerequisite: Upper division standing.
Repeatable for credit
3 units

ENGL 182. Women in Literature

Image of women in literature or works of significant women writers.

Prerequisite: Upper division standing.
Repeatable for credit
3 units

ENGL 183. Major Authors

One major author's works. Author changes each semester.

Prerequisite: Upper division standing.
Repeatable for credit
3 units

ENGL 184. Directed Reading

For upper division students with special objectives.

Prerequisite: Instructor and department chair approval.
Repeatable for credit
Credit / No Credit
1-2 units

ENGL 190. Honors Colloquium

Selected topics.

Prerequisite: Admission to departmental honors program.
3 units

ENGL 193. Capstone Seminar in Literature and Self-Reflection

Culminating course for majors, requiring students to reflect on experiences in the major. Readings and discussions focus on literature and self-reflection. Each student submits a Portfolio of writing from at least five courses taken in major. Written work for seminar is added to Portfolio.

Prerequisite: Upper division standing.

3 units

ENGL 193C. Capstone Seminar in Creative Writing and Self Reflection

Culminating seminar for the Creative Writing Concentration, requiring students to reflect on experiences and revise work completed in several other courses taken in the Concentration. New writing done for the seminar will be included with revised work in a final Portfolio.

Prerequisite: Upper division standing. For Creative Writing Concentration Credit only.

3 units

ENGL 195. Literary Theory

Examines major theoretical approaches to literature with attention to the history and politics of reception and canon formation.

Prerequisite: Upper division standing.

3 units

ENGL 199. Writing Internship and Seminar

Internship at a local industry, publisher, arts or public agency. Discussion of experiences and problems in the internship. Study of professional practices and demands, including those of career preparation and development.

Prerequisite: 3.0 GPA both overall and in English; no credit in English major.

Repeatable for credit

Credit / No Credit

3 units

GRADUATE

ENGL 201. Materials and Methods of Literary Research

Use and evaluation of resource for literary research; problems in critical writing and literary history. Required for all English Masters students (to be taken as early as possible after achieving Classified standing).

3 units

ENGL 201C. Materials and Methods of Literary Production

Introduces Creative Writing graduate students to the resources, traditions, techniques, and standards for writing poetry, fiction, and creative nonfiction. Students will study the role of the individual writer within the literary and academic communities, and explore various forms of literary activity and the literary life. Co-requisite with first MFA Workshop Course.

Prerequisite: Classified standing or instructor consent.

3 units

ENGL 202. Poetic Craft and Theory

Poetry as a literary genre - its patterns and sub-types (such as the epic, lyric, pastoral, and elegy). Attention to the theories of poetics applied to practical criticism. Prior permission of graduate advisor may be repeatable once for credit.

Prerequisite: Classified standing or instructor consent.

Repeatable for credit

3 units

ENGL 203. Narrative Craft and Theory

Study of prose fiction and nonfiction as a literary genre (with sub-genres) and an art which can be learned through imitation and analysis. Course emphasizes the formal and technical properties of prose narrative, with attention to Narratology. Prior permission of graduate advisor may be repeatable once for credit.

Repeatable for credit

3 units

ENGL 204. Seminar in Modern Approaches to Literature

Study of modern approaches to the theory and practice of literary criticism. With prior permission of graduate advisor may be repeatable once for credit.

Prerequisite: Classified standing or instructor consent.

Repeatable for credit

3 units

ENGL 208. Seminar in Comparative Literature

Study of selected topics in comparative literature. Some reading and research will be done in a language other than English. With prior permission of graduate advisor may be repeatable once for credit.

Prerequisite: Classified standing or instructor consent.

Repeatable for credit

3 units

ENGL 211. Seminar in Twentieth Century Poetry

Intensive study of selected major English and American poets of the twentieth century. With prior permission of graduate advisor may be repeatable once for credit.

Prerequisite: Classified standing or instructor consent.

Repeatable for credit

3 units

ENGL 215. Seminar in Myth and Symbolism

Comparative study of mythic and symbolic forms in literature, focusing on theory and a variety of texts. With prior permission of graduate advisor may be repeatable once for credit.

Prerequisite: Classified standing or instructor consent.

Repeatable for credit

3 units

ENGL 216. Seminar in Medieval English Literature

Study of selected writings in medieval English literature and their continental sources. With prior permission of graduate advisor may be repeatable once for credit.

Prerequisite: Classified standing or instructor consent.

Repeatable for credit

3 units

ENGL 217. Seminar in English Renaissance

Study of selected writers of the sixteenth century. With prior permission of graduate advisor may be repeatable once for credit.

Prerequisite: Classified standing or instructor consent.

Repeatable for credit

3 units

ENGL 220. Seminar in Performance Cultures

See TA 220.

Repeatable for credit

3 units

ENGL 225. Seminar in Shakespeare

A close study of selected plays and of selected major issues in Shakespearean criticism. With prior permission of graduate advisor may be repeatable once for credit.

Prerequisite: Classified standing or instructor consent.

Repeatable for credit

3 units

ENGL 226. Seminar in Tragedy

An exploration of the nature of tragedy based on a study of the theory of tragic drama and of representative works from the Greeks to the moderns. With prior permission of graduate advisor may be repeatable once for credit.

Prerequisite: Classified standing or instructor consent.

Repeatable for credit

3 units

ENGL 227. Seminar in Comedy

Study of the bases of the comic and their application in dramatic form.

Prerequisite: Instructor consent.

3 units

ENGL 229. Seminar in Seventeenth Century British Literature

Study of selected writers from 1600 to 1660. With prior permission of graduate advisor may be repeatable once for credit.

Prerequisite: Classified standing or instructor consent.

Repeatable for credit

3 units

ENGL 230. Seminar in Eighteenth Century British Literature

Study of selected writers from 1660 to 1789. With prior permission of graduate advisor may be repeatable once for credit.

Prerequisite: Classified standing or instructor consent.

Repeatable for credit

3 units

ENGL 232. Seminar in Romanticism

Study of selected British writers from the late eighteenth and early nineteenth centuries. With prior permission of graduate advisor may be repeatable once for credit.

Prerequisite: Classified standing or instructor consent.

Repeatable for credit

3 units

ENGL 233. Seminar in the Victorian Period

Study of selected British writers from 1832 to 1900. With prior permission of graduate advisor may be repeatable once for credit.

Prerequisite: Upper division standing.

Repeatable for credit

3 units

ENGL 240. Poetry Writing Workshop

Poetics and poetry writing as preparation for thesis. Includes theory and practice of major trends in contemporary poetry. Intensive workshop experience. With prior permission of graduate advisor may be repeatable once for credit.

Prerequisite: Graduate standing and admission via portfolio acceptance to the Writing Focus.

Repeatable for credit

3 units

ENGL 241. Fiction Writing Workshop

Fiction writing as preparation for thesis. Study of canonical and contemporary fiction and fiction produced by students. Intensive workshop experience. May be repeatable twice for credit.
Repeatable for credit
3 units

ENGL 242. Nonfiction Writing Workshop

Nonfiction writing as preparation for thesis. Study and critique of canonical and contemporary nonfiction. Intensive workshop experience. May be repeatable twice for credit.
Repeatable for credit
3 units

ENGL 253. Seminar in Period Studies of American Literature

Focuses on a period of American literature such as Colonial, Revolutionary/Federal, Romantic, Realist, Modernist, Post-modernist. With prior permission of graduate advisor may be repeatable once for credit.
Prerequisite: Classified standing or instructor consent.

Repeatable for credit
3 units

ENGL 254. Seminar in Genre Studies of American Literature

Focuses of a genre of American Literature such as poetry, the novel, the short story, drama, autobiography, the personal and/or philosophical essay. With prior permission of graduate advisor may be repeatable once for credit.
Prerequisite: Classified standing or instructor consent.

Repeatable for credit
3 units

ENGL 255. Seminar in Thematic Studies of American Literature

Focuses on development of a theme in American Literature. With prior permission of graduate advisor may be repeatable once for credit.
Prerequisite: Classified standing or instructor consent.

Repeatable for credit
3 units

ENGL 256. Seminar in Twentieth Century British Literature

Study of selected British writers since 1900. With prior permission of graduate advisor may be repeatable once for credit.
Prerequisite: Classified standing or instructor consent.

Repeatable for credit
3 units

ENGL 257. Seminar in the History of Rhetoric

Study of rhetorical theory and practice from classical to modern times.
Prerequisite: Classified standing or instructor consent.

3 units

ENGL 259. Seminar in Composition Studies

Study of current approaches to composition.
Prerequisite: Classified standing or instructor consent.

3 units

ENGL 292. Beowulf

A critical reading of the Anglo-Saxon poem in the original language.
Prerequisite: Classified standing or instructor consent.

3 units

ENGL 298. Special Study

Advanced and individual research and projects.
Prerequisite: Instructor consent.
Repeatable for credit
Credit / No Credit
1-4 units

ENGL 299. Master's Thesis or Project

Prerequisite: Admission to candidacy for the master's degree.
Repeatable for credit
Credit/No Credit/Report in Progress
1-6 units

ENED 365. Seminar in English Education

Topics in English Education for middle and high school English teachers.
Prerequisite: Acceptance into the English Credential Program.
Credit / No Credit
1 unit

ENGLISH EDUCATION**UPPER DIVISION****ENED 184I. Student Teaching for English Individualized Interns**

Supervised student teaching in English class(es) in the public school where the student is employed as an Individualized Intern. May be repeated for a total of 12 units.

Prerequisite: Admission to Single Subject Credential Program; English advisor and Single Subject Coordinator consent.
Repeatable for credit
Credit / No Credit
2-4 units

ENED 184Y. Student Teaching II – Classroom Teaching

Minimum of 75 periods of classroom teaching, laboratory or field teaching in appropriate subject, grades 7-12, plus related school activities and seminar. Course is repeatable for credit in the same term.

Prerequisite: ENED 353.
Repeatable for credit
Credit / No Credit
4 units

ENED 184Z. Student Teaching III – Classroom Teaching

May be in a different subject/school and will be at a different grade level. Includes final summary project for student teaching.

See ENED 184Y.

Repeatable for credit
Credit / No Credit
4 units

GRADUATE**ENED 242C. Educational Internship in Teaching**

Designed to provide opportunity for supervised teaching on either the elementary or secondary school level on the basis of a special provisional credential.

Prerequisite: Matriculation as a Graduate student.
Repeatable for credit
Credit / No Credit
4-6 units

ENED 353. Methods of Teaching English

Theory and practice of teaching literature and language arts to a diverse student population. Strategies for planning and implementing curricula appropriate to junior and senior high school.

3 units

Environmental Studies

College of Social Sciences

Washington Square Hall 118
408-924-5450 (Voice)
408-924-5477 (Fax)
www.sjsu.edu/depts/EnvStudies/

Professors

Gary A. Klee
Lynne A. Trulio

Associate Professors

Katherine Cushing
Rachel O'Malley, Chair

Assistant Professors

Asim Zia

Curricula

- BS, Environmental Studies
- BS, Environmental Studies, Concentration in Energy
- BA, Environmental Studies
- BA, Environmental Studies, Preparation for Teaching
- BS, Environmental Studies, Concentration in Environmental Impact Assessment
- Minor, Environmental Studies
- Minor, Energy and the Environment
- Minor, Park Ranger and Administration
- MS, Environmental Studies

The focus of the Environmental Studies Department is on a rigorous, systematic and integrated approach to the study, management and solution of environmental problems and issues. Upon completion of the degree program, students have solid theoretical and applied preparation for making substantive contributions to this expanding and vital field. With more than 30 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, park management, environmental regulation and policy, hazardous materials, 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 150 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. Additionally, faculty are active in community, regional, state and international environmental affairs, and bring these outside experiences to the classroom.

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 informational organization that works closely with the Environmental Studies Department and the surrounding community. As its primary work the ERC organizes SJSU's Earth Day, provides resource information with its files and library, and works with the Silicon Valley Environmental Partnership to develop indicators of the environmental health of Silicon Valley. 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 the fields of 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 earth science, 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	22-24
ENVS 010, STAT 095 and ECON 001B (10); <i>From the following, take two courses in one field and a third course in another field:</i> CHEM 001A, CHEM 001B, PHYS 002A, PHYS 002B, BIOL 001, BIOL 002 (12-14)	
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 (25)	
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. Advisor-approved electives in environmental studies	
Additional Electives	18
Advisor-approved minor and/or electives	
Total Units Required	124-126

**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	23-24
ENVS 010, STAT 095 and ECON 001B (10); <i>From the following, take two courses in one field and a third course in another field:</i> CHEM 001A, CHEM 001B, PHYS 002A, PHYS 002B, BIOL 001, BIOL 002 (12-14); <i>In the remaining discipline, take one course from:</i> CHEM 030A, ENVS 010, PHYS 001 (3)	
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 (25)	
Energy Concentration	18
ENVS 116, ENVS 119, ENVS 130, ENVS 132 and ENVS 133 (15); Complete one course from: ENVS 108, ENVS 113, ENVS 125, ENVS 135, ENVS 140, ENVS 142, ENVS 167, ENVS 179, ENVS 190 (3)	
Additional Electives	24
At least 6 of the 24 units must be from the following field courses: ENVS 144, ENVS 154, ENVS 165, ENVS 166, ENVS 187, ENVS 189, ENVS 190, ENVS 191, ENVS 270. Advisor-approved electives in Environmental Studies	
Total Units Required	125-126

**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	22-24
STAT 095 and ECON 001B (7); <i>From the following, take two courses in either CHEM, PHYS or BIOL; and a third course in another field:</i> CHEM 001A, CHEM 001B, PHYS 002A, PHYS 002B, BIOL 001, BIOL 002 (12-14); <i>In the remaining discipline, take one course from:</i> CHEM 030A, ENVS 010, PHYS 001 (3)	
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 (25)	
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: 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	124-126

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 (25)	
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. Advisor-approved minor and/or electives	
Total Units Required	120

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	0-3
Of the 51 units required by the university, 48-51 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, LLD 108 and EDEL 108E (9) 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); SOCS 137, SOCS 138 and SOCS 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	10-16
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 and the Environment

	Semester Units
Core Requirements	9
ENVS 116, ENVS 119 and ENVS 133	
Electives	6
Two additional courses to be selected with and approved by the energy minor advisor.	
Total Units Required	15

Minor – Park Ranger and Administration

	Semester Units
Core Requirements	9
Three 3-unit lower division (CSU-transferable) courses from an A.S. degree in Park Management, from West Valley College or an equivalent program.	
Additional Courses	6
Complete two courses from: ENVS 165, ENVS 187, ENVS 189	
Additional Units	3
Complete three units from: POLS 114, SOCI 153	
Total Units Required	18

MS – Environmental Studies

Graduate Coordinator: Katherine Cushing;
Advisors: Rachel O'Malley, Gary Klee,
 Lynne Trulio, Asim Zia

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

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

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 Studies and Research website at www.sjsu.edu/gradstudies.

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)	30
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 coursework, Plan B students will take comprehensive examinations on four topics to be arranged by the student's project committee.	
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

Courses**ENVIRONMENTAL STUDIES****LOWER DIVISION****ENVS 001. Introduction to Environmental Issues**

What effects are human activities having on the natural environment and our quality of life? Discover the technical and social causes of environmental degradation; learn how your personal and career choices can protect the environment for current and future generations.

GE: D3
 3 units

ENVS 010. Life on a Changing Planet

An introduction to basic knowledge and theory in the life sciences, focusing on the theme of environmental change. Examines challenging issues in biology and methods for evaluating conflicting data and claims. Develops students' analytical and writing skills.

Prerequisite: As required for Core GE courses in B2.
 GE: B2
 3 units

UPPER DIVISION**ENVS 100W. Environmental Research and Writing**

Advanced research and writing skills for future environmental professionals. Focus on issues, literature and challenges associated with environmental writing. Emphasis on writing for technical and general audiences.

Prerequisite: ENGL 1B (with a grade of C or better); Completion of core GE, satisfaction of Writing Skills Test and upper division standing; declared major in environmental studies.
 ABC/No Credit
 GE: Z
 3 units

ENVS 105. Environmental Change and Problems, San Francisco Bay Area

Systematic inquiry into physical environments of the San Francisco Bay Area, with emphasis on impacts and changes to those systems by human action. Analysis of public action and policies regarding regional environmental issues.

Prerequisite: ENVS 1 and ENVS 100W.
 Offered only occasionally.
 3 units

ENVS 107. Introduction to Environmental Economics and Policy

Analysis of basic economic and political factors related to the environmental crisis. Surveys policy approaches to the problem: regulation, taxes, subsidies, cost benefit analysis.

Prerequisite: ECON 1B or instructor consent.
 3 units

ENVS 108. Topics in Cost-Benefit Analysis

See ECON 108.

3 units

ENVS 110. Resource Analysis

Quantitative analysis of Earth's natural resources. Topics typically include the status and trends of resources such as topsoil, agriculture, water, energy, wildlife and the impacts of human population growth on these resources. Emphasis is on problem solving and computational methods applied to resource management problems.

Prerequisite: ENVS 1, ENVS 10, STAT 95.

3 units

ENVS 111. Geology and the Environment

See GEOL 111.

GE: R

3 units

ENVS 112. Hazardous Waste

Familiarization with major environmental problems through study of federal, state and regional regulation of hazardous waste management. Methods of treatment, disposal and destruction.

Prerequisite: Junior standing, two semesters chemistry and biological science or instructor consent.

3 units

ENVS 113. Atmospheric Pollution

See METR 113.

GE: R

3 units

ENVS 116. Solar Energy Theory and Applications

Theory and application of passive solar heating and cooling, daylighting, solar electric technologies. Emphasis on systems level approach, focus on solar in the built environment, solar hot water, and photovoltaics for residential and commercial settings.

Prerequisite: CHEM 1A, PHYS 2A (or equivalent).
3 units

ENVS 117. Human Ecology

Diversity and similarity of human adaptation, cultural evolution, cultural change and environmental modification in African, Asiatic, Oceanic and Latin American cultural groups. Emphasis: traditional non-Western conservation practices and their lessons for the modern-day resource manager.

Prerequisite: ENVS 1, ENVS 10 and ENVS 100W, or instructor consent.
3 units

ENVS 118. Gardens, Culture and Environment

Analysis of how gardens reveal the relationship between culture and nature. Emphasis on the perception, design, and ecology of gardens in world cultures and their adaptation in the California landscape.

Prerequisite: ENVS 100W or instructor consent.
3 units

ENVS 119. Energy and the Environment

The various sources of energy available to humans and the major forms of energy consumption by industrialized civilizations, the environmental implications of both and the trade-offs between energy consumption and environmental protection.

Prerequisite: ENVS 1.
3 units

ENVS 121. Population and Global Change

See GEOG 121.

3 units

ENVS 123. Historic Preservation and Neighborhood Revival

See URBP 123.

Repeatable for credit

3 units

ENVS 124. Introduction to Environmental Law

Development, interpretation, application and enforcement of environmental laws, regulations and legal policies by legislatures, courts, administrative agencies and citizens. Examination of air and water quality, hazardous materials, workplace, land use and wetlands regulation, international, ethical and efficacy issues.

Prerequisite: ENVS 1.

3 units

ENVS 125. Advanced Environmental Law

Detailed evaluation of practical environmental law problems. Students use an interdisciplinary approach, combining evaluation of technical data with review and application of law and policy. Extensive legal analysis and writing.

Prerequisite: ENVS 1 and ENVS 124.

3 units

ENVS 126. Environmental Ethics and Philosophy

See PHIL 126.

3 units

ENVS 128. Water Resource Management

Water uses and supplies; water resource measurement methods; hydrology; erosional processes; sediment production and transport particularly on Northern California coastal watershed; flood hazards and methods of control; groundwater and groundwater aquifers; water quality.

Prerequisite: CHEM 1A and STAT 95.

3 units

ENVS 129. Water Policy in the Western U.S.

Water resource development; federal reclamation policy; water law and water rights; interbasin transfers; Colorado River, Central Valley Project and State Water Project; groundwater overdrafting; agricultural water and water pricing.

Prerequisite: ENVS 124.

3 units

ENVS 130. Energy Policy Analysis

Energy policy questions and examination of choices including energy pricing, options for controlling oil imports, incentives for reducing consumption, allocation and end use controls, synthetic fuel production, offshore oil development.

Prerequisite: Upper division standing.

3 units

ENVS 131. Air Pollution Meteorology

See METR 131.

Repeatable for credit

3 units

ENVS 132. Solar Home Design

Techniques for designing environmentally-sensitive, healthy, passive solar homes via site selection, energy conservation, lighting, non-hazardous natural building materials. Residential passive solar heating and cooling approaches for retrofits and new construction. For homeowners, teachers, professional designers and architects.

Prerequisite: ENVS 1 or instructor consent.

3 units

ENVS 133. Alternative Energy Strategies

Problems and prospects facing non-conventional or alternative energy options including energy efficiency, solar, wind, geothermal biomass conversion, fuel cells and alternative modes of transportation.

Prerequisite: ENVS 119.

3 units

ENVS 134. Topics in Historic Preservation

See URBP 134.

Repeatable for credit

3 units

ENVS 135. U.S. Environmental Policy

See POLS 135.

3 units

ENVS 136. Introduction to Land Use and Facilities Planning

See URBP 136.

3 units

ENVS 140. Politics and the Environment

Application of different political strategies to local issues examined through examples from specific environmental challenges facing the Bay Area. Considers relative contributions of the public, elected officials, government employees and interest groups in environmental decision-making.

Prerequisite: ENVS 1, ENVS 107 and ENVS 124 or instructor consent.

3 units

ENVS 142. Introduction to Environmental Planning

See URBP 142.

Repeatable for credit

3 units

ENVS 144. California Wetland Controversies

Impact of agriculture, urbanization and other human land uses upon the California coastal wetlands with emphasis on current environmental problems and controversies. State public agencies concerned with vital environmental problems and analysis of current environmental legislation. May be repeated for a maximum of 8 units.

Prerequisite: ENVS 1 or instructor consent.

Repeatable for credit

4 units

ENVS 146. Communication and the Environment

See COMM 146.

3 units

ENVS 148. Recycling and Resource Management

Principles and techniques of applying integrated waste management solutions to the municipal solid waste problem. Examines environmental, political, technological and economic aspects. Concentration on source reduction, recycling, composting, incineration and landfilling.

Prerequisite: ENVS 1 or instructor consent.

3 units

ENVS 151. Race, Poverty and the Environment

See AFAM 151.

3 units

ENVS 152. Environmental Issues and Global Distribution of Goods

Scientific approach to goods distribution worldwide, and environmental consequences of shipping materials and packaging, which when discarded become waste. Mutual interests of commerce and environment.

Prerequisite: Completion of Core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: R

3 units

ENVS 154. Sustainable Agriculture

Analysis of and practicum in environmentally sustainable methods of food production, emphasizing biological diversity, water conservation, air quality, social equity and economic justice. Special focus on primary research in natural and social sciences for sustainable agriculture. Field trips and labs.

Prerequisite: ENVS 1 and ENVS 10 or instructor consent.
Lecture 3 hours/lab 2 hours.
4 units

ENVS 158. Environmental Education

Education of individuals can make a difference in protecting the environment. Comprehensive overview from the perspective of schools, American culture and law. Interdisciplinary approaches for correcting conditions created by modern living, energy and environmental demands.

Prerequisite: ENGL 1A and ENGL 1B; upper division standing or instructor consent.
3 units

ENVS 159. Nature and World Cultures

See AMS 159.
GE: V
3 units

ENVS 164. New Challenges in Nature and Religion

See RELS 164.
3 units

ENVS 165. National Parks

See GEOG 165.
3 units

ENVS 166. Nature and Conservation Photography

Still photography of nature and illustrative conservation subjects in both color and black and white. Theory critique sessions supplemented with field experience. May be repeated for a maximum of 8 units.

Prerequisite: Photo experience or instructor consent.
Lecture 2 hours/activity 4 hours.
Repeatable for credit
4 units

ENVS 167. Managing Environmental Issues

See BUS 167.
3 units

ENVS 168. Global Climate Change I

See COMM 168.
6 units

ENVS 168W. Global Climate Change II

See COMM 168W.
ABC/No Credit
GE: R+S+V+Z
3 units

ENVS 169. Introduction to Computers in Planning

See URBP 169.
Repeatable for credit
3 units

ENVS 170. Introduction to Environmental Health and Safety

An overview of environmental health and safety issues that affect industry and government, including regulatory framework and basic technical elements; course covers historical and legislative background, risk management and training required in the field.

Prerequisite: ENVS 100W.
3 units

ENVS 173. Sustainable Forest Management

A field based course that provides students with a conceptual framework and practical tools for understanding sustainable forest management. Students explore issues such as forest restoration, community based forestry, forest diversity, agroforestry, and techniques for monitoring forest health.

Prerequisite: ENVS 01. ENVS 10, or upper division standing.
4 units

ENVS 178. Introduction to Transportation and Urban Planning

See URBP 178.

Repeatable for credit
3 units

ENVS 179. Urban Geographic Information Systems

See URBP 179.

Repeatable for credit
3 units

ENVS 181. Environmental Resource Center

A supervised operation of a center for environmental information resources and dissemination and consultation, staffed by those taking the course as a service to campus and community. Students adopt one particular subject area as their specialty.

Prerequisite: ENVS 1. May be repeated by majors for 3 unit maximum; by non-majors for 6 units.

Activity 2-6 hours.
Repeatable for credit
Credit / No Credit
1-3 units

ENVS 184. Directed Reading

Directed reading in an environmental subject to gain broader knowledge.

Prerequisite: Specific proposal to or need defined by department, with consent of faculty.
Credit / No Credit
1-4 units

ENVS 185. Environmental Impact Analysis

Current environmental impact reports subjected to critical review; determination of alternative procedures and mitigating opportunities; extensive field analysis and practice.

Prerequisite: ENVS 1, ENVS 124.
Lecture 3 hours/lab 2 hours.
4 units

ENVS 187. Environmental Restoration

Interdisciplinary art and science of restoring destroyed or degraded habitats. Emphasis on the interplay of ecological principles, policy, public involvement and economics in the planning, implementation and monitoring of restoration plans. Field work and independent research required.

Prerequisite: ENVS core and ENVS 100W.
Lecture 3 hours/lab 2 hours.
4 units

ENVS 189. Coastal Field Studies

Introduction to coastal resource management. Field work and independent research ranging from Big Sur to Tomales Bay emphasizing marine sanctuaries, environmental problems and conservation strategies. Suitable for Multiple Subjects Waiver Program elective. May be repeated for a maximum of 12 units.

Prerequisite: ENVS 1.
Lecture 2 hours/lab 3 hours.
Repeatable for credit
3 units

ENVS 190. Advanced Environmental Impact Assessment

Advanced work in the field of environmental impact assessment. Analysis of EIA documents for regulatory adequacy, consistency with local planning documents and technical accuracy.

Prerequisite: Familiarity with CEQA and NEPA required; ENVS core, ENVS 185 or instructor consent.
Lecture 3 hours/lab 2 hours.
4 units

ENVS 191. Advanced Environmental Restoration

Advanced restoration research and applications. Emphasis on independent literature research and field data collection. Participation in on-going restoration project. Fieldwork and grasp of restoration principles required.

Prerequisite: ENVS 187.
Lecture 3 hours/lab 2 hours.
Offered only occasionally.
4 units

ENVS 193. Supervised Projects and Research

Projects and/or research to build practical environmental skills. Work primarily off campus and with direct social value.

Repeatable for credit
Credit / No Credit
1-15 units

ENVS 194. Environmental Internship

Service in a local, city, county, state or federal environmental agency, school or in environmental industry; or with a worthwhile environmental education or protection organization or center.

Prerequisite: Senior standing in Environmental Studies.
Repeatable for credit
Credit / No Credit
3-9 units

ENVS 195. Instructor Assistant in Environmental Studies

Experience as a tutor assistant in classroom demonstrations, field techniques and discussion. May be repeated for a 4 unit maximum, but not for same course or instructor.

Prerequisite: Senior standing, ENGL 1A, instructor consent and appropriate academic background.
Repeatable for credit
Credit / No Credit
1-3 units

ENVS 198. Senior Seminar

Culmination of interdisciplinary curriculum in environmental studies through integration and critical assessment of the field. Goal is transition from undergraduate experience to full professionalism.

Prerequisite: Filed for graduation, completion of Environmental Studies core, including ENVS 100W.
3 units

ENVS 199. Senior Thesis

Thesis demonstrating grasp of environmental subjects and principles, ability to research in depth particular environmental problems and facility at recommending practical solutions.

Prerequisite: Senior standing in Environmental Studies, completion of all Environmental Studies core requirements and university 100W writing requirement.
Credit / No Credit
3 units

GRADUATE**ENVS 200. Seminar: Environmental Methods**

Rigorous analysis of methods used by social, physical and natural scientists in assessing a region's natural resources and quality of environment. Environmental application of such techniques as field methods, maps, social surveys and project evaluation. Critique of individual research proposals.

Description: ENVS 297 and consent of graduate advisor.

3 units

ENVS 230. Seminar: Environmental Theory

Intensive probe into interdisciplinary research and theories related to natural resources and environmental management. Applications of these theories to the present-day concerns of the resource manager and environmental professional. Oral critiques of various theories; advanced individual research paper and presentation.

Prerequisite: Graduate standing in Environmental Studies or instructor consent.

3 units

ENVS 250. Seminar: U.S. Environmental Thought

An intensive, critical analysis of the original works of historically significant authors such as Marsh, Powell, Muir, Olmsted and Leopold, with emphasis on their contributions toward the evolution of conservation and environmental thought. Individual research with oral and written reports.

Prerequisite: Graduate standing in Environmental Studies or instructor consent.

3 units

ENVS 260. Computer Applications in Environmental Analysis

Overview of environmental simulation software used by professionals to investigate design alternatives and decision-making in the social and life sciences. Application of model designs to individual projects.

Prerequisite: Graduate standing in Environmental Studies or instructor consent.

Repeatable for credit

3 units

ENVS 270. Field Studies in Water Resource Management

An intensive field investigation of water resource agencies and projects to acquaint resource managers, environmental quality specialists and other interested students with projects and philosophies unique to particular geographic areas.

Prerequisite: Graduate standing in environmental studies or instructor consent.

3 units

ENVS 285. Graduate Internship

Advanced service in a local, city, county, state agency, federal agency or environmental industry.

Prerequisite: Graduate standing in Environmental Studies or instructor consent.

Repeatable for credit

Credit / No Credit

3-9 units

ENVS 295. Graduate Teaching Assistant

Teaching experience in environmental studies at the college level. Does not meet requirements for California Certification in Elementary or Secondary Education. May be repeated for maximum of 6 units, but not for same course or instructor.

Prerequisite: Graduate standing in Environmental Studies or instructor consent.

Repeatable for credit

Credit / No Credit

3 units

ENVS 297. Research and Proposal Development

Students develop their thesis topic through extensive literature research. The product will be a draft thesis proposal to be circulated among potential committee members.

Prerequisite: Graduate Standing in Environmental Studies or consent of instructor.

Repeatable for credit

3 units

ENVS 298. Special Study

Advanced individual research and projects.

Prerequisite: Graduate standing in Environmental Studies or instructor consent.

Repeatable for credit

Credit / No Credit

1-4 units

ENVS 299. Master's Thesis or Project

Masters thesis research.

Prerequisite: Graduate standing in Environmental Studies or instructor consent.

Repeatable for credit

Credit/No Credit/Report in Progress

1-6 units

Foreign Languages

College of Humanities and the Arts

Clark Hall 421
408-924-4602

Professors

Jean-Luc Desalvo
Seiichiro Inaba
Romey Sabalius
Juan Antonio Sempere-Martinez
Maria del Carmen Sigler, Provost
Danielle Trudeau
Dominique van Hooff, Chair

Associate Professors

Anne Fountain
Marianina Olcott

Assistant Professors

Damian Bacich
Eleanor Marsh
Juan Matallana
Fu Tan
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, Spanish
- Minor, Italian
- Minor, Japanese
- Minor, Russian
- MA, French
- MA, Spanish

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 and make you a globally competent professional. To that end, the Department of Foreign Languages 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 and Russian as well as language and culture courses in Portuguese and Hebrew. 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 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 foreign 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 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.

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 foreign 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 foreign 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 foreign 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 102B (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 foreign 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
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Preparation for the Major and Supporting Courses	15-19
FREN 025A, FREN 025B and FREN 025C (or equivalent) (9); One year of a second foreign language, ancient or modern (or equivalent) (6-10)	

Requirements in the Major	36
FREN 101A, FREN 101B, FREN 101C, FREN 102A, FREN 102B, 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 foreign language is recommended.	

Electives	0-10
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Total Units Required	120
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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 foreign 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 foreign 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 foreign 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 foreign 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 Requirements45
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 Education2
Preparation for the Major and Supporting Courses16-20
SPAN 025A and SPAN 025B (or equivalent) (10); One year of a second foreign language (or equivalent) (6-10)	
Requirements in the Major35
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)	
Minor12-21
A minor in another foreign language is recommended.	
Electives1-6
Total Units Required120

Minor – Chinese

Semester Units

Preparation for the Minor10
CHIN 001A and CHIN 001B	
Requirements in the Minor19
CHIN 025A, CHIN 025B, CHIN 101A, CHIN 101B and CHIN 102	

Total Units Required29

Minor – Japanese

Semester Units

Preparation for the Minor10
JPN 001A and JPN 001B	
Requirements in the Minor21
JPN 025A, JPN 025B, JPN 101A, JPN 101B and JPN 102	

Total Units Required31

Minor – French

Semester Units

Preparation for the Minor10
FREN 001A and FREN 001B	
Requirements in the Minor18
FREN 025A, FREN 025B, FREN 025C, FREN 101A, FREN 101B and FREN 101C (15); FREN 102A or FREN 102C (3)	

Total Units Required28

Minor – Russian

Semester Units

Preparation for the Minor10
RUSS 001A and RUSS 001B	
Requirements in the Minor16
RUSS 102X (7); Nine additional upper division units in Russian (9)	

Total Units Required26

Minor – German

Semester Units

Preparation for the Minor10
GERM 001A and GERM 001B	
Requirements in the Minor21
GERM 025A, GERM 025B, GERM 101A and GERM 101B (18); GERM 102A or GERM 102B (3)	

Total Units Required31

Minor – International Business

Students in International Business have the option to select one of the following foreign 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 Foreign Language Faculty Member to advise them regarding their minor. For further information about required courses, please see the Foreign Language website: www.sjsu.edu/foreignlanguages/programs/intlbusminors/

Chinese 16 units
French 15 units
German 17 units
Japanese 17 units
Spanish 17 units

Minor – Spanish

Semester Units

Preparation for the Minor10
SPAN 001A and SPAN 001B	
Requirements in the Minor21
SPAN 025A, SPAN 025B, SPAN 101A and SPAN 101B (18); SPAN 102A or SPAN 102B (3)	

Total Units Required31

Minor – Italian

Semester Units

Preparation for the Minor10
ITAL 001A and ITAL 001B	
Requirements in the Minor20
ITAL 002, ITAL 101A, ITAL 101B and ITAL 102 (14); Six additional upper division units in Italian (6)	

Total Units Required30

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

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 Studies and Research website at www.sjsu.edu/gradstudies.

Completing Requirements

The minimum program for a Master of Arts degree includes the following:

- A. 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 foreign language at San José State University may be taken in the Graduate Division).
- B. Additional 100- or 200-level courses in the Department of Foreign Languages 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.

Courses**ARABIC****LOWER DIVISION****ARAB 001A. Elementary Arabic I**

This course in Modern elementary Arabic is designed for students with no previous knowledge of Modern Standard Arabic. Starting with the alphabet, students will gradually learn basic oral and written communication in the target language.

Note: This course is not for native speakers of Arabic.
5 units

ARAB 001B. Elementary Arabic II

Continuation of Arabic 1A. Arabic 1B is designed for students with a very basic knowledge of modern elementary Arabic. The course is a combination of lecture, discussion, exercises and communicative activities.

Prerequisite: Arab 1A or equivalent.
5 units

CHINESE**LOWER DIVISION****CHIN 001A. Elementary Chinese**

Basic skills and structure of the language in the context of culture.

Prerequisite: 1B: CHIN 1A (or equivalent).
Note: Year course.
5 units

CHIN 001B. Elementary Chinese

Basic skills and structure of the language in the context of culture.

Prerequisite: 1B: CHIN 1A (or equivalent).
Note: Year course.
5 units

CHIN 010A. Conversational Cantonese

Spoken Cantonese, with special concern for the language of the Chinese-American community in California.

Note: Year course.
3 units

CHIN 010B. Conversational Cantonese

Spoken Cantonese, with special concern for the language of the Chinese-American community in California.

Prerequisite: CHIN 10A.
Note: Year course.
3 units

CHIN 025A. Intermediate Chinese

Development of basic skills in the use of Mandarin; preparation for advanced courses in the language.

Prerequisite: 10 units of college Chinese (or equivalent).
Note: Year course.
GE: C2
5 units

CHIN 025B. Intermediate Chinese

Development of basic skills in the use of Mandarin; preparation for advanced courses in the language.

Prerequisite: 10 units of college Chinese (or equivalent).
Note: Year course.
GE: C2
5 units

UPPER DIVISION**CHIN 101A. Advanced Chinese**

Readings related to culture, discussion, syntax and composition. May be repeated once for credit.

Prerequisite: 20 units of college Chinese (or equivalent).
Year course.
Repeatable for credit
3 units

CHIN 101B. Advanced Chinese

Readings related to culture, discussion, syntax and composition. May be repeated once for credit.

Prerequisite: 20 units of college Chinese (or equivalent).
Year course.
Repeatable for credit
3 units

CHIN 102. Chinese Culture

Traditional Chinese culture in light of contemporary values. Ideographs, folk tales, festivals, creeds and customs, myths and superstitions, opera and the arts, women, the art of living.

Taught in English.
3 units

CHIN 110. Structure of the Chinese Language

Introduction to study of Chinese dialects and Mandarin grammar from historical viewpoint, with reference to early development and present diversity. Emphasis on the writing system and areal features of the language.

Prerequisite: CHIN 25B or instructor consent.
3 units

CHIN 111. Advanced Mandarin Conversation

Development of skills for group discussion, dialogue and individual oral presentations on topics pertaining to everyday life, the professions and the arts. May be repeated once for credit, but only 3 units apply to major.

Prerequisite: 4 semesters of college Chinese or instructor consent.
Repeatable for credit
3 units

CHIN 120A. Modern Chinese Literature (1900-1949)

Literary movements and major works of Chinese narrative, poetry and drama from 1900 to 1949.

Prerequisite: CHIN 101B (or equivalent).
3 units

CHIN 120B. Introduction to Classical Chinese Literature

Stylistic and structural characteristics of classical Chinese through selected readings in various texts.

Prerequisite: CHIN 25B or instructor consent.
3 units

CHIN 130. Readings in Chinese Culture

Readings in selected aspects of Chinese culture, e.g., philosophical, social, political, historical. Texts may be chosen from scholarly essays, newspaper articles or creative narrative. May be repeated when content changes.

Prerequisite: CHIN 101B (or equivalent). For readings in classical Chinese: CHIN 120B or instructor consent.
Repeatable for credit
3 units

CHIN 132. Business Chinese

Practical Chinese business terms and their usage in a variety of business situations; business correspondence; cultural insights on Chinese customs that underlie business transactions.

Prerequisite: CHIN 25B or instructor consent..
3 units

CHIN 140. Chinese Culture and Politics Through Literature

Exploration of the interaction between culture, politics and literature as reflected in the contemporary (post-1949) narrative, poetry and drama of China, Taiwan and Hong Kong.

Prerequisite

Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

Taught in English.

GE: V

3 units

CHIN 141. Classical Chinese Drama and Poetry

Introduction to Peking opera and Yuan-Ming drama; critical study of classical poetry and sanqu songs.

Prerequisite: CHIN 120B or instructor consent.

3 units

CHIN 180. Individual Studies in Chinese

Individual work by arrangement.

Prerequisite: 6 units of upper division Chinese (or equivalent) and instructor consent.

Repeatable for credit

Credit / No Credit

1-3 units

FOREIGN LANGUAGE EDUCATION**UPPER DIVISION****FLED 184I. Student Teaching for Foreign Language Individualized Interns**

Supervised student teaching in foreign language class(es) in the public school where the student is employed as an Individualized Intern. May be repeated for a total of 12 units.

Prerequisite: Admission to Single Subject Credential Program; foreign language advisor and Single Subject Coordinator consent.

Repeatable for credit

Credit / No Credit

2-4 units

FLED 184Y. Student Teaching II – Classroom Teaching

Minimum 80-120 class periods of classroom teaching or field teaching in appropriate single subjects, grades K-12 and related teaching activities and seminar.

Prerequisite: Joint approval of major and Education departments.

Repeatable for credit

Credit / No Credit

4-6 units

FLED 184Z. Student Teaching III – Classroom Teaching

May be in different subject/school and will be at a different grade level.

See FLED 184Y.

Repeatable for credit

Credit / No Credit

4-6 units

FLED 380. Teaching Foreign Languages

Theory and practice.

Prerequisite: College approval and competence in at least one foreign language.

3 units

FRENCH**LOWER DIVISION****FREN 001A. Elementary French**

Basic structure of the language in the context of culture.

Note: Year course.

CAN FREN 2

5 units

FREN 001B. Elementary French

Basic structure of the language in the context of culture.

Prerequisite: FREN 1A (or equivalent).

Note: Year course.

CAN FREN 2

5 units

FREN 001X. Elementary French Individualized

Self-paced individualized instruction.

Repeatable for credit

1-5 units

FREN 001Y. Elementary French Individualized

Self-paced individualized instruction.

Prerequisite: 5 units of FREN 1A and FREN 1X (or equivalent).

Repeatable for credit

1-5 units

FREN 025A. Intermediate French: Reading

Intensive training in reading authentic texts of a broad variety of genres in French to increase the students' proficiency from ACTFL Low Intermediate to Mid and High Intermediate levels.

Prerequisite: 10 units of college French (or equivalent).

GE: C2

3 units

FREN 025B. Intermediate French: Writing

Intensive practice in French expository writing to increase the students' written proficiency from ACTFL Low Intermediate to Mid and High levels. Review of major grammatical rules, vocabulary development and introduction to translation.

GE: C2

3 units

FREN 025C. Intermediate French: Oral Communication

Practice in pronunciation, listening and speaking in formal and informal situations. Introduction to Francophone cultures and linguistic variations. May be repeated twice for credit.

Prerequisite: 10 units of college French (or equivalent).

Repeatable for credit

3 units

UPPER DIVISION**FREN 101A. Advanced French: Reading and Writing**

Increase proficiency in reading/writing from intermediate high to advanced. Gain competence in reading abstract and linguistically complex materials (fiction, non fiction and creative). Improve ability to express self in formal and informal writing on practical, social or professional topics.

Prerequisite: Two years of college French or equivalent.

3 units

FREN 101B. Advanced French: Written Communication**FREN 101B. Advanced French: Written Communication**

Increase proficiency in reading/writing from advanced to advanced plus level. Gain competence in reading materials that are abstract and linguistically complex (literary genres). Improve ability to write about topics with precision and describe, narrate and support point of view.

Prerequisite: Two years of college French or equivalent.

3 units

FREN 101C. Advanced French: Oral Communication

Ability to participate effectively in most formal and informal exchanges on practical, social, professional and abstract topics. Express and support opinions and hypothesize using native-like discourse strategies. May be repeated for credit, but only 3 units apply to minor or major.

Prerequisite: Two years of college French or equivalent.

Repeatable for credit

3 units

FREN 102A. French Culture

History, physical and cultural geography, fine/folk art and daily life of France up to the time of the Revolution.

Prerequisite: 20 units of college French (or equivalent).

Repeatable for credit

3 units

FREN 102B. Francophone Cultures: Through Literature and Cinema

History, physical and cultural geography, fine/folk art and daily life of France and French-speaking countries.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. Advanced level in French. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

On-line - taught in English.

GE: V

3 units

FREN 102C. French Culture

French culture from the Revolution to the 21st Century.

Prerequisite: 20 units of college French (or equivalent).

3 units

FREN 105. Advanced Grammar: Phonetic Analysis

Contrastive analysis of French and English sound systems and their practical application to pronunciation. Intensive conversation and reading of poetry and plays. Language laboratory.

Prerequisite: 20 units of college French (or equivalent).

3 units

FREN 110. Advanced Grammar: Grammatical Analysis

Structural analysis. Comparison of morphological and syntactical patterns of English and French. Course is repeatable for a total of 6 units.

Prerequisite: FREN 101B (or equivalent).

Repeatable for credit

3 units

FREN 120A. French Literature from the Middle Ages to 1600

Prerequisite: FREN 101B (or equivalent).

3 units

FREN 120B. French Literature of the Seventeenth through the Eighteenth Centuries

Prerequisite: FREN 101B (or equivalent). May be repeated for credit when content changes.
Repeatable for credit
3 units

FREN 132. French for the Professions

Culture, institutions, laws, business practices and resources of French-speaking countries trading with the U.S. Preparation for international positions as translators, interpreters, managers in travel companies, banks, export-import houses, computer firms, etc. May be repeated when content changes.
Prerequisite: 4 semesters of French or instructor consent.
Repeatable for credit
3 units

FREN 140A. French Literature of the Nineteenth Century

May be repeated for credit when content changes.
Prerequisite: FREN 101B (or equivalent).
Repeatable for credit
3 units

FREN 140B. French Literature 20th-21st Centuries

May be repeated for credit when content changes.
Prerequisite: FREN 101B (or equivalent).
Repeatable for credit
3 units

FREN 160. Masters of French Literature

Significant periods or genres. May be repeated for credit when content changes.
Prerequisite: Two courses from 120, 140 series (or equivalent).
Repeatable for credit
3 units

FREN 170. Translation and Comparative Stylistics

Theory and practice of translation for various purposes including literary, scientific, and professional ones. Comparative stylistics of English and French.
Prerequisite: FREN 110 (or equivalent).
Repeatable for credit
3 units

FREN 180. Individual Studies in French

Individual work by arrangement.
Prerequisite: 11 units of upper division French (or equivalent preparation with grade of "B") and instructor consent.
Repeatable for credit
Credit / No Credit
1-3 units

GRADUATE**FREN 201. Modern French**

Study of the French language from the 18th Century to the present, with special attention to popular language in literature and the media. May be repeated for credit when content changes.
Alternate years, or on demand.
Repeatable for credit
3 units

FREN 202. Seminar in French/Francophone Civilizations and Culture

Research projects exploring the character of France, analysis of French culture and institutions or the appreciation of the cultural richness and diversity of Francophone areas throughout the world, highlighting differences among French-speaking peoples and countries.

Repeatable for credit
3 units

FREN 210. Instructional Resources for the Teaching of French Language and Culture

Provides instruction in recent resources developed for the teaching of French as a second language. Materials (films, audiotapes, textbooks and resources on the Internet) are selected and evaluated according to the National Standards for Foreign Language Teaching.

Alternate years, or on demand.
Repeatable for credit
3 units

FREN 220. Historical French Linguistics

The origins and evolution of the French language through selected readings.

Alternate years, or on demand.
3 units

FREN 240. Francophone Literature

Majors works in Francophone literature from Quebec, Western Africa, Maghreb, West Indies and other Francophone countries. Analysis and comparison of poetry, plays and novels in relation to French metropolitan literature. Special attention to social and political issues. May be repeated for credit when course content changes.

Repeatable for credit
3 units

FREN 250. Seminar in the French Novel

Detailed study of selected French novels. May be repeated for credit when course content changes.

Every fourth year, or on demand.
Repeatable for credit
3 units

FREN 260. Seminar in the French Drama

Study in depth of selected works of the French theatre. May be repeated for credit when course content changes.

Every fourth year, or on demand.
Repeatable for credit
3 units

FREN 270. Seminar in the French Lyric

Study of selected poems representing the main schools of French poetry. May be repeated for credit when course content changes.

Every fourth year, or on demand.
Repeatable for credit
3 units

FREN 280. Seminar in French Thinkers

Study of the works of significant French essayists and critics. May be repeated for credit when course content changes.

Every fourth year, or on demand.
Repeatable for credit
3 units

FREN 298. Special Study

Advanced individual research and projects.

Prerequisite: Instructor consent.
Repeatable for credit
Credit / No Credit
1-6 units

FREN 299. Master's Thesis or Project

Prerequisite: Admission to candidacy for the MA degree or advisor consent.
Repeatable for credit
Credit/No Credit/Report in Progress
3-6 units

GENERAL FOREIGN LANGUAGE**LOWER DIVISION****FORL 001A. Elementary Arabic I**

This course in Modern Elementary Arabic is designed for students with no previous knowledge of Modern Standard Arabic. Starting with the alphabet, students will gradually learn basic oral and written communication in the target language.

Note: This course is not for native speakers of Arabic.
5 units

UPPER DIVISION**FORL 100W. Writing Workshop**

Advanced composition with practice in research and development of writing skills using a variety of literary and cultural concepts.

Prerequisite: ENGL 1B (with a grade of C or better); Completion of core GE, satisfaction of Writing Skills Test and upper division standing.
ABC/No Credit
GE: Z
3 units

FORL 121. Introduction to Comparative Literature

See CLIT 121.
3 units

FORL 122. Topics in Comparative World Literature

See CLIT 122.
Repeatable for credit
3 units

GRADUATE**FORL 200. Introduction to Graduate Studies**

Techniques of writing research papers and theses. Includes bibliographical sources and style sheets. Comprehensive study of literary genres and techniques for critique of these genres. Emphasis on organization of materials.

3 units

FORL 205. Romance Linguistics

An introduction to the development of the Romance languages from Vulgar Latin: phonology, morphology, syntax, lexical growth; emergence of dialects. Preparatory to historical linguistics of any Romance language.

Prerequisite: Fundamental knowledge of Latin and 34 units (or equivalent) in at least one Romance language.
3 units

GERMAN**LOWER DIVISION****GERM 001A. Elementary German**

Basic structure of the language in the context of culture.

Note: Year course.
CAN GERM 2
5 units

GERM 001B. Elementary German

Basic structure of the language in the context of culture.

Prerequisite: 5 units of college German or equivalent.
Note: Year course.
CAN GERM 4
5 units

GERM 025A. Intermediate German

Review of basic grammar expansion of vocabulary and communication skills in the context of culture.

Prerequisite: 10 units of college German (or equivalent).
Note: Year course.
CAN GERM B
GE: C2
5 units

GERM 025B. Intermediate German

Introduction of complex grammatical features, continued expansion of vocabulary and communication skills in the context of culture.

Prerequisite: 15 units of college German or equivalent.
Note: Year course.
CAN GERM B
GE: C2
5 units

UPPER DIVISION**GERM 101A. Advanced German**

Readings, oral discussion, syntax and composition.

Prerequisite: 20 units of college German (or equivalent).
Year course.
4 units

GERM 101B. Advanced German

Readings, oral discussion, syntax and composition.

Prerequisite: 20 units of college German (or equivalent).
Year course.
4 units

GERM 102A. German Culture until 1871

Development of society, civilization and culture in German-speaking countries until 1871, including aspects of geography, political and intellectual history, fine art and cultural anthropology.

Prerequisite: 20 units of college German (or equivalent).
3 units

GERM 102B. German Culture from 1871 to the Present

Development of society, civilization and culture in German-speaking countries from 1871 to the present, including aspects of geography, political and intellectual history, fine art and cultural anthropology.

Prerequisite: 20 units of college German (or equivalent).
3 units

GERM 105. German Phonology

Contrastive analysis of German and English sound systems and their practical application to pronunciation. Language laboratory.

Prerequisite: 20 units of college German (or equivalent).
2 units

GERM 110. German Linguistics

Advanced grammar, structural analysis of language, linguistic theories.

Prerequisite: 20 units of college German or equivalent.
3 units

GRK 120A. Modern German Prose

Notable prose works of our time in the context of the political, social and cultural development of German-speaking countries.

Prerequisite: GERM 101A and GERM 101B.
3 units

GRK 120B. Modern German Drama and Lyric

Notable plays and poetic works of our time in the context of the political, social and cultural development of German-speaking countries.

Prerequisite: GERM 101A and GERM 101B.
3 units

GERM 140A. German Literature from Goethe to 1900

Notable works from the period of Storm and Stress to Naturalism in the context of the political, social and cultural development of the German-speaking countries.

Prerequisite: GERM 101A and GERM 101B.
3 units

GERM 140B. German Literature Before Goethe

Notable works from the Medieval Period through the Enlightenment in the context of political, social and cultural development of the German-speaking countries.

Prerequisite: GERM 101A and GERM 101B.
3 units

GERM 150. German Literature and Film

Study of major works of German Literature adapted to screen. Overview of major literary movements in the 20th century with accompanying historical/political events.

Prerequisite: Upper division standing.
3 units

GERM 160. Special Topics in Germanic Studies

Significant authors, literary and cultural movements, linguistic themes. When content changes course may be repeated.

Prerequisite: Two courses from 120, 140 series (or equivalent).
Repeatable for credit
3 units

GERM 180. Individual Studies in German

Individual work by arrangement.

Prerequisite: 11 units of upper division German (or equivalent with grade of "B") and instructor consent.
Repeatable for credit
Credit / No Credit
1-3 units

GREEK

UPPER DIVISION**GRK 105A. Classical and Koine Greek**

Morphology and syntax with emphasis on the Attic dialect. Major dialects and historic linguistic and literary foundations of Koine.

Offered only occasionally.
3 units

GRK 105B. Classical and Koine Greek

Morphology and syntax with emphasis on the Attic dialect. Major dialects and historic linguistic and literary foundations of Koine.

Prerequisite: GRK 105A (or equivalent).
3 units

GRK 180. Individual Studies in Greek

By arrangement.

Prerequisite: 6 units of upper division Greek (or equivalent) and instructor consent.
Repeatable for credit
Credit / No Credit
1-3 units

HEBREW

LOWER DIVISION**HEBR 010A. Elementary Hebrew**

Basic structure of the language in the context of culture.

Year course.
3 units

HEBR 010B. Elementary Hebrew

Basic structure of the language in the context of culture.

Prerequisite: HEBR 10A (or equivalent).
Year course.
3 units

HEBR 015A. Intermediate Hebrew

Developing speaking skills.

Prerequisite: HEBR 10A and HEBR 10B (or equivalent).
Year course.
3 units

HEBR 015B. Intermediate Hebrew

Developing speaking skills.

Prerequisite: HEBR 10A and HEBR 10B (or equivalent).
Year course.
3 units

UPPER DIVISION**HEBR 102A. Advanced Hebrew**

Readings, grammar, discussion and composition.

Prerequisite: 12 units of college Hebrew (or equivalent).
Year course.
3 units

HEBR 102B. Advanced Hebrew

Readings, grammar, discussion and composition.

Prerequisite: 12 units of college Hebrew (or equivalent).
Year course.
3 units

ITALIAN

LOWER DIVISION**ITAL 001A. Elementary Italian**

Basic skills and structure of the language in the context of culture.

Note: Year course.
CAN ITAL 2
5 units

ITAL 001B. Elementary Italian

Basic skills and structure of the language in the context of culture.

Prerequisite: ITAL 1A (or equivalent).
Note: Year course.
CAN ITAL 4
5 units

ITAL 001X. Elementary Italian – Individualized Learning

Alternate to Ital 1A and Ital 1B. Student sets own rate of progress. May be repeated for a 5 unit maximum.

Repeatable for credit
1-5 units

ITAL 001Y. Elementary Italian – Individualized Learning

Alternate to Ital 1A and Ital 1B. Student sets own rate of progress. May be repeated for a 5 unit maximum.

Prerequisite: 5 units of ITAL 1A, ITAL 1X (or equivalent).
Repeatable for credit
1-5 units

ITAL 002. Basic Reading and Writing

Sentence structure and idiomatic usage in compositions, translations and simple essays.

Prerequisite: 2 semesters of college Italian (or equivalent).
3 units

UPPER DIVISION**ITAL 101A. Advanced Italian**

Readings, discussion, syntax and composition. When content changes may be repeated.

Prerequisite: 13 units of college Italian (or equivalent) or instructor consent.
Year course.
Repeatable for credit
4 units

ITAL 101B. Advanced Italian

Readings, discussion, syntax and composition. When content changes may be repeated.

Prerequisite: 13 units of college Italian (or equivalent) or instructor consent.
Year course.
Repeatable for credit
4 units

ITAL 102. Italian Culture

Culture and civilization of Italy. Dante, Manzoni, Moravia, Quasimodo, Montale, etc. When content changes may be repeated.

Prerequisite: 16 units of college Italian (or equivalent).
Repeatable for credit
3 units

ITAL 180. Individual Studies in Italian

Individual work by arrangement.

Prerequisite

At least 11 units of upper division Italian (or equivalent with grade of "B") and instructor consent.

Repeatable for credit
Credit / No Credit
1-3 units

JAPANESE**LOWER DIVISION****JPN 001A. Elementary Japanese**

Basic skills and structure of the language in the context of culture.

CAN JPN 2
5 units

JPN 001B. Elementary Japanese

Basic skills and structure of the language in the context of culture.

Prerequisite: JPN 1A (or equivalent).
CAN JPN 4
5 units

JPN 025A. Intermediate Japanese

Continuation of JPN 1B. Preparation for advanced courses in the language.

Prerequisite: 10 units of college Japanese (or equivalent).
GE: C2
5 units

JPN 025B. Intermediate Japanese

Continuation of JPN 25. Preparation for advanced courses in the language.

Prerequisite: 15 units of college Japanese (or equivalent).
GE: C2
5 units

UPPER DIVISION**JPN 101A. Advanced Japanese**

Readings, oral discussion, study of syntax and composition.

Prerequisite: 20 units of college Japanese (or equivalent).
4 units

JPN 101B. Advanced Japanese

Readings, oral discussion, study of syntax and composition.

Prerequisite: 20 units of college Japanese (or equivalent).
Year course.
4 units

JPN 102. Japanese Culture

History, geography, fine art and daily life of Japan. May be repeated when content changes.

Prerequisite: 20 units of college Japanese (or equivalent).
Repeatable for credit
3 units

JPN 103. Japanese Ideography and Calligraphy

Ideographs and Kana-syllabaries in their historical contexts-meaning, imagery, socio-anthropological backgrounds, formation and use of modern Japanese. Studio practice.

Prerequisite: JPN 1A and JPN 1B.
3 units

JPN 107. Japanese for Business Professionals

Advanced Japanese course for specific (business) purposes. It will acquaint students with practical vocabulary, a wide range of language structures, business manners, and business customs for developing communication skills useful in conducting business in Japanese.

Prerequisite: JPN 101A, JPN 101B or instructor consent.
3 units

JPN 110. Japanese Linguistics

Structural analysis of Japanese from historical as well as descriptive perspectives and its application to distinct Japanese social and communicative behaviors.

Prerequisite: JPN 101B or instructor consent.
3 units

JPN 120A. Modern Japanese Literature

Introductory survey of Japanese literature since 1868. Masterpieces of modern Japanese narrative, poetry and drama.

Prerequisite: JPN 101B or instructor consent.
3 units

JPN 120B. Classical Japanese Literature

Introductory survey of Japanese literature from the eighth century Heian Period through the end of the Tokugawa Period in 1867, encompassing the poetic, narrative and dramatic traditions of pre-modern Japan.

Prerequisite: JPN 101B or instructor consent.
Offered only occasionally.
Repeatable for credit
3 units

JPN 130. Readings in Japanese Culture

Readings from contemporary texts (including scholarly essays, newspapers and narrative) on various aspects of Japanese culture.

Prerequisite: JPN 101B or instructor consent.
Repeatable for credit
3 units

JPN 140A. Modern Japanese Drama and Lyric

Representative plays and poetic works of modern Japanese authors.

Prerequisite: JPN 101B or instructor consent.
3 units

JPN 140B. Classical Japanese Drama and Lyric

Masterpieces of Noh, Kyogen, Bunraku, Tanka and Haiku in classical Japanese literature.

Prerequisite: JPN 101B or instructor consent.
Offered only occasionally.
3 units

JPN 160. Special Topics in Japanese Studies

Significant authors, literature and cultural movements or linguistic themes. May be repeated when content changes.

Prerequisite: Two courses from JPN 120A, JPN 120B, JPN 140A and JPN 140B, or instructor consent.

Repeatable for credit
3 units

JPN 180. Individual Studies in Japanese

Individual work by arrangement.

Prerequisite: 11 units of upper division Japanese (or equivalent with grade of "B") and instructor consent.
Repeatable for credit
Credit / No Credit
1-3 units

LATIN**LOWER DIVISION****LATN 001A. Elementary Latin**

Latin grammar, syntax and readings.

Note: Year course.
3 units

LATN 001B. Elementary Latin

Latin grammar, syntax and readings.

Note: Year course.
3 units

UPPER DIVISION**LATN 180. Individual Studies in Latin**

Individual work by arrangement.

Prerequisite: 6 units of Latin (or equivalent with a grade of "B") and instructor consent.
 Repeatable for credit
 Credit / No Credit
 1-3 units

PORTUGUESE

LOWER DIVISION**PORT 001A. Elementary Portuguese**

Basic skills and structure of the language in the context of culture.

Year course.
 5 units

PORT 001B. Elementary Portuguese

Basic skills and structure of the language in the context of culture.

Prerequisite: PORT 1A (or equivalent).
 Note: Year course.
 5 units

PORT 001X. Elementary Portuguese – Individualized Learning

Alternate to Port 1A and Port 1B. Student sets own rate of progress. May be repeated for a 5 unit maximum.

Repeatable for credit
 1-5 units

PORT 001Y. Elementary Portuguese – Individualized Learning

Alternate to Port 1A and Port 1B. Student sets own rate of progress. May be repeated for a 5 unit maximum.

Prerequisite: 5 units of PORT 1A, PORT 1X (or equivalent).
 Repeatable for credit
 1-5 units

PORT 020A. Intermediate Portuguese

Reading, sentence structure and idiomatic usage in conversation and simple essays.

Prerequisite: 2 semesters of college Portuguese (or equivalent).
 3 units

PORT 020B. Intermediate Portuguese

A continuation of Port 20A.

Prerequisite: 3 semesters of college Portuguese (or equivalent).
 3 units

PORT 020X. Intermediate Portuguese – Individualized Learning

Alternate to Port 20A. Student sets own rate of progress. May be repeated for a 3 unit maximum.

Prerequisite: 2 semesters of college Portuguese (or equivalent).
 Repeatable for credit
 1-3 units

PORT 020Y. Intermediate Portuguese – Individualized Learning

Alternate to Port 20B. Student sets own rate of progress. May be repeated for a 3 unit maximum.

Prerequisite: 3 semesters of college Portuguese (or equivalent).
 Repeatable for credit
 1-3 units

UPPER DIVISION**PORT 102A. Portuguese Culture**

Culture and civilization of Portugal.

Prerequisite: 16 units of college Portuguese (or equivalent).
 Repeatable for credit with content changes.
 Repeatable for credit
 3 units

PORT 103A. Advanced Portuguese

Reading, discussion, morphology, syntax and composition.

Prerequisite: 16 units of college Portuguese (or equivalent).
 Year course.
 3 units

PORT 103B. Advanced Portuguese

Reading, discussion, morphology, syntax and composition.

Prerequisite: 16 units of college Portuguese (or equivalent).
 Year course.
 3 units

PORT 180. Individual Studies in Portuguese

By arrangement.

Prerequisite: 6 units of upper division Portuguese (or equivalent) and instructor consent.
 Repeatable for credit
 Credit / No Credit
 1-3 units

PUNJABI

LOWER DIVISION**PUNJ 001A. Elementary Punjabi**

Introduction to modern Punjabi as spoken in India and Pakistan. Basic structure of the language in the context of the culture.

5 units

PUNJ 001B. Elementary Punjabi

Continuation of Punjabi 1A. Introduction to modern Punjabi as spoken in India and Pakistan. Basic structures of the language in the context of the culture.

Prerequisite: PUNJ 1A or instructor consent.
 5 units

PUNJ 025A. Intermediate Punjabi

Continuation of Punjabi 1B. Will introduce representative readings of modern Punjabi literature. Focus on grammatical structures based on readings. Build conversational skills and cultural competence.

Prerequisite: PUNJ 1B or equivalent or instructor consent.
 5 units

PUNJ 025B. Intermediate Punjabi

Continuation of Punjabi 25A. Will cover representative readings of modern Punjabi literature. Focus on grammatical structures based on readings. Build conversational skills and cultural competence.

Prerequisite: PUNJ 25A or equivalent or instructor consent.
 5 units

RUSSIAN

LOWER DIVISION**RUSS 001A. Elementary Russian**

Basic skills and structure of the language in the context of culture.

Note: Year course.
 5 units

RUSS 001B. Elementary Russian

Basic skills and structure of the language in the context of culture.

Prerequisite: RUSS 1A (or equivalent).
 Note: Year course.
 5 units

RUSS 001X. Elementary Russian – Individualized Learning

Alternate to Russ 1A and Russ 1B. Student sets own rate of progress. May be repeated for a 5 unit maximum.

Repeatable for credit
 1-5 units

RUSS 001Y. Elementary Russian – Individualized Learning

Alternate to Russ 1A and Russ 1B. Student sets own rate of progress. May be repeated for a 5 unit maximum.

Prerequisite: 5 units of RUSS 1A, RUSS 1X (or equivalent).
 Repeatable for credit
 1-5 units

RUSS 002X. Basic Reading and Writing – Individualized Learning

Reading and sentence structure and idiomatic usage in compositions and simple essays. Student sets own rate of progress. May be repeated for a 3 unit maximum.

Prerequisite: 2 semesters of college Russian (or equivalent).
 Repeatable for credit
 1-3 units

RUSS 003X. Intermediate Russian – Individualized Learning

Continuation of Russ 2X. Student sets own rate of progress. May be repeated for a 3 unit maximum.

Prerequisite: 2 semesters of college Russian (or equivalent).
 Repeatable for credit
 1-3 units

UPPER DIVISION**RUSS 101X. Advanced Russian – Individualized Learning**

Student sets own rate of progress. May be repeated for 4 unit maximum when content changes.

Prerequisite: 16 units of college Russian (or equivalent).
 Repeatable for credit
 1-4 units

RUSS 102X. Russian for Special Studies: Individualized Learning

Problems of translation in specialized texts; terminology in scientific, commercial and technological fields.

Prerequisite: 10 units of college Russian (or equivalent).
 3 units

RUSS 180. Individual Studies in Russian

Individual work by arrangement.

Prerequisite: 14 units of upper division Russian (or equivalent with grade of "B") and instructor consent.
Repeatable for credit
Credit / No Credit
1-3 units

SPANISH**LOWER DIVISION****SPAN 001A. Elementary Spanish**

Basic skills and structure of the language in the context of culture.

Note: Year course.
CAN SPAN 2
5 units

SPAN 001B. Elementary Spanish

Basic skills and structure of the language in the context of culture.

Prerequisite: SPAN 1A (or equivalent).
Note: Year course.
CAN SPAN 4
5 units

SPAN 003. Conversational Spanish

Multi-level, small-group course to practice speaking Spanish. May be repeated twice for credit.

Prerequisite: 10 units of college Spanish (or equivalent).
Not accepted as preparation for advanced courses.
Native speakers see General Information section.
Repeatable for credit
3 units

SPAN 004A. Basic Spanish

A video-based course in practical Spanish for use in a variety of professional and everyday activities. For beginners and those who need to improve conversational skills. May be repeated for 6 unit maximum.

Year course.
Repeatable for credit
3 units

SPAN 004B. Basic Spanish

A video-based course in practical Spanish for use in a variety of professional and everyday activities. For beginners and those who need to improve conversational skills. May be repeated for 6 unit maximum.

Year course. No credit toward Spanish major.
Repeatable for credit
3 units

SPAN 020A. Spanish for Spanish Speakers

Focus on written Spanish. Study of grammar and orthography and development of reading and writing skills. For students whose first or home language is Spanish.

Prerequisite: Knowledge of spoken Spanish and instructor consent.
3 units

SPAN 020B. Spanish for Spanish Speakers

Continuation of Span 20A. For students whose first or home language is Spanish. Focus on development of reading and writing skills.

Prerequisite: SPAN 20A or instructor consent.
3 units

SPAN 025A. Intermediate Spanish

Continuation of Span 1B. Preparation for advanced courses in the language.

Prerequisite: 10 units of college Spanish (or equivalent).
Note: Year course.
GE: C2
5 units

SPAN 025B. Intermediate Spanish

Continuation of Span 1B. Preparation for advanced courses in the language.

Prerequisite: 10 units of college Spanish (or equivalent).
Note: Year course.
GE: C2
5 units

UPPER DIVISION**SPAN 101A. Advanced Spanish**

Readings, oral discussion, syntax and composition.

Prerequisite: 20 units of college Spanish (or equivalent).
Year course.
4 units

SPAN 101B. Advanced Spanish

Readings, oral discussion, syntax and composition.

Prerequisite: 20 units of college Spanish (or equivalent).
Year course.
4 units

SPAN 102A. Spanish Culture

History, geography, fine art and daily life of Spain.

Prerequisite: 20 units of college Spanish (or equivalent).
3 units

SPAN 102B. Hispanic American Culture

History, geography, fine art and daily life of Hispanic America.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test, upper division standing and ability to understand spoken Spanish when course is taught in Spanish. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.
Offered in Spanish or English in alternate semesters. Spanish majors and minors must register for Spanish version.
GE: V
3 units

SPAN 105. Spanish Phonology

Contrastive analysis of Spanish and English sound systems and application to pronunciation. Language laboratory.

Prerequisite: 20 units of college Spanish (or equivalent).
3 units

SPAN 110. Spanish Morphology and Syntax

Structural analysis. Comparison of morphological and syntactical patterns of English and Spanish.

Prerequisite: SPAN 101B (or equivalent).
3 units

SPAN 111. Advanced Spanish Conversation

Development of skills for group discussion, dialogue and individual oral presentations on topics pertaining to everyday life, the professions, social problems and the arts. May be repeated once for credit, but only 3 units apply to major.

Prerequisite: 4 semesters of college Spanish or advisor consent.
Native speakers see General Information section.
Repeatable for credit
3 units

SPAN 115. Introduction to Literary Studies in Spanish

Introduction to literary studies in Spanish with readings from Spain and Spanish America. Overview of genres and fundamental concepts of criticism.

Prerequisite: SPAN 101B or instructor consent.
3 units

SPAN 120A. Spanish Literature

Notable works from beginning to present.

Prerequisite: SPAN 101B, SPAN 102A or SPAN 102B (or equivalent).
Year course.
3 units

SPAN 120B. Spanish Literature

Notable works from beginning to present.

Prerequisite: SPAN 101B, SPAN 102A or SPAN 102B (or equivalent).
Year course.
3 units

SPAN 132. Business Spanish

Introduction to business practices of Spanish-speaking countries. Fundamentals of commercial Spanish correspondence in advertising, foreign trade and transportation. For translators, interpreters, salespersons and similar occupations.

Prerequisite: Two years of Spanish or instructor consent.
3 units

SPAN 140A. Spanish American Literature

Notable works from beginning to present.

Prerequisite: SPAN 101B, SPAN 102A and SPAN 102B (or equivalent).
Year course.
3 units

SPAN 140B. Spanish American Literature

Notable works from beginning to present.

Prerequisite: SPAN 101B, SPAN 102A and SPAN 102B (or equivalent).
Year course.
3 units

SPAN 160A. Hispanic Culture

Cultural phenomena, both historical and contemporary, of Spanish-speaking countries.

Prerequisite: SPAN 101B (or equivalent).
Repeatable for credit
3 units

SPAN 160B. Hispanic Linguistics

Spanish as spoken in diverse Hispanic cultures. May be repeated for credit when content changes.

Prerequisite: SPAN 101B (or equivalent).
Repeatable for credit
3 units

SPAN 160C. Hispanic Literature

Outstanding authors or movements of Spain and Latin America.

Prerequisite: SPAN 101B (or equivalent).
Repeatable for credit
3 units

SPAN 170. Spanish Translation: Theory and Practice

Theory and practice of translation for various purposes including literary, scientific, and professional ones. Comparative stylistics of English and Spanish.

Prerequisite: SPAN 101B.
Repeatable for credit
3 units

SPAN 180. Individual Studies in Spanish

Individual work by arrangement.

Prerequisite: 11 units of upper division Spanish (or equivalent with grade of "B") and instructor consent.
 Repeatable for credit
 Credit / No Credit
 1-3 units

GRADUATE

SPAN 201. Modern Spanish

Analysis of the evolving patterns of syntax and idiomatic construction in the Spanish language of the twentieth and twenty-first centuries. May be repeated for credit when content changes.

Repeatable for credit
 3 units

SPAN 202. Seminar in Hispanic Civilization and Culture

A comprehensive study of one or more Spanish-speaking countries. A: Andean countries (Colombia, Ecuador, Peru and Bolivia). B: Caribbean (Cuba, Dominican Republic, Puerto Rico and Caribbean coasts of Venezuela, Colombia and the nations of Central America). C: Mexico. D: River Plate Region (Argentina, Chile, Paraguay and Uruguay). E: Spain. May be repeated for credit when course content changes.

Repeatable for credit
 3 units

SPAN 210. Old Spanish

Analysis of the style and structure of medieval Spanish through selected readings. A fundamental knowledge of Latin is required.

Alternate years, or on demand.
 3 units

SPAN 220. Historical Spanish Linguistics

An inquiry into the growth of the Spanish language in Spain and Latin America from the twelfth century to modern times.

3 units

SPAN 225. Spanish Dialectology

Regional, social, historical, generational dialects that shape Spanish. Research involves readings on dialectology and sociolinguistics, learning to identify characteristics of Spanish dialects and exploring the implications of language contact, linguistic borrowing and code-switching.

Prerequisite: Graduate standing or instructor consent.
 3 units

SPAN 250. Seminar in the Siglo de Oro

The works of Cervantes, principal dramatists of the Comedia and other significant authors of the Golden Age. May be repeated for credit when content changes.

Repeatable for credit
 3 units

SPAN 260. Seminar in "Modernismo" and the Generation of '98

A: Origin and development of the poetry and prose of the Modernista movement in Latin America. B: Examination of the spiritual and intellectual crisis created in Spain by the 1898 Spanish-American War. Representative works of Unamuno, Baroja, Azorin, Valle-Inclan and Antonio Machado. May be repeated for credit when content changes.

Repeatable for credit
 3 units

SPAN 270. Seminar in Contemporary Literature of Spain and Spanish America

In-depth study of representative Latin American and Spanish authors of the twentieth and twenty-first centuries. May be repeated for credit when content changes.

Repeatable for credit
 3 units

SPAN 280. Seminar in Romanticism in Spain and Spanish America

Philosophical and artistic aspects of the movement, studied through representative Latin American or Spanish works in all literary genres. Focus will alternate each time the course is offered. May be repeated for credit when content changes.

Repeatable for credit
 3 units

SPAN 298. Special Study

Advanced individual research and projects.

Prerequisite: Instructor consent.
 Repeatable for credit
 Credit / No Credit
 1-6 units

SPAN 299. Master's Thesis or Project

Prerequisite: Admission to candidacy for the MA degree and advisor consent.

Repeatable for credit
 Credit/No Credit/Report in Progress
 3-6 units

VIETNAMESE

LOWER DIVISION

VIET 001A. Elementary Vietnamese

Basic skills and structure of the language in the context of culture.

3 units

VIET 001B. Elementary Vietnamese

Continuation of Viet 1A. Basic skills and structure of the language in the context of culture.

Prerequisite: VIET 1A or equivalent.
 3 units

VIET 020A. Vietnamese Literacy for Vietnamese

Designed for Vietnamese speakers wishing to learn to read and write in Vietnamese. Focus on teaching the five accents, the twelve vowels, basic grammar structures and translation from English to Vietnamese.

Prerequisite: Knowledge of spoken Vietnamese and instructor consent.
 3 units

VIET 020B. Vietnamese Literacy for Vietnamese

Continuation of Viet 20A. Readings in cultural history and translation of materials to further develop literacy in heritage speakers of Vietnamese.

3 units

General Engineering

College of Engineering

Engineering 491
408-924-3968
408-924-3883 (Fax)

Professors

Thalia Anagnos
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, Bioengineering
- MS, Engineering
- MS, Engineering,
Concentration in Biomedical Devices

The General Engineering program offers students an opportunity for interdisciplinary engineering education not available through traditional single discipline programs. The General Engineering curriculum provides a comprehensive program in basic engineering sciences, and engineering management, and entrepreneurship. The program was developed to give a broad background in engineering that is supportive of a systems approach to engineering. The combination of a strong theoretical background, special knowledge in specific areas, and broad skill in problem solving gives the graduate in general engineering a sound but flexible base for a career. The student can move into practice or advanced study in almost any branch of the engineering profession. With equal ease, the student can prepare for further study in management.

The BS General Engineering program provides a multidisciplinary degree that is developed by the student in coordination with an advisor.

The MS Engineering degree (MSE) 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 coursework 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, and Specialized Networking. Programs are offered primarily on-campus but there are also some specialized programs offered off-campus, such as the accelerated 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 Martin, and KLA-Tencor. The MSE programs include participation with local industry professionals as committee members and sponsors of Master's projects and theses.

Specializations have been developed at the MS level in areas such as engineering management, electronic materials and devices, embedded systems, bioinformatics/bioengineering, and biomedical devices. Other custom combinations can be developed as special options that are combinations courses from different disciplines. Students at the BS level can also develop similar types of programs to meet specific objectives. General engineering is an ideal choice for the student who prefers a program where engineering is combined with other fields or for engineering programs that are broader than those of the more traditional fields of engineering.

Program of Study and Advisement

General Engineering students must file formal study plans with their advisor. Majors are expected to consult regularly with their advisors with respect to their program and to obtain the advisor's approval for required program documentation.

Career Possibilities

The combination of a strong theoretical background, special knowledge in specific areas, and broad skill in problem solving gives the graduate in general engineering a sound but flexible career foundation. The general engineer is sought after as a project leader and as a liaison to management. Graduates in general engineering are employed in companies of all sizes and in a wide range of technical activity. Typical assignment titles are project designers, project supervisors, product development group leaders, sales engineers, technical service representatives, and in many other technical and administrative positions.

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

All students in the BS General Engineering Program are required to choose a program objective with an approved program of study when they have attained Junior status, completion of 60 semester units. Typical programs of study may include objectives such as Engineering Management, Engineering Entrepreneurship, Bioengineering, and Engineering Materials and Devices. Actual course and unit requirements depend on the selected options. The normal course of study for the BS – General Engineering degree consists of 130 to 133 semester hours of approved work in the following areas:

	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
Preparation for the Major	29
MATH 030, MATH 031, MATH 032, MATH 129A, MATH 133A, PHYS 070, PHYS 071 and CHEM 001A	
Required for the Major	69
Engineering Common Area	14
ENGR 010, MATE 025, EE 098, CE 099 and CMPE 046	
Required Courses	35
ENGR 100W and core courses as approved by advisor	
Additional Courses	20
Elective courses and senior design as approved by advisor	
Total Units Required	130-133

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
ENGR 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, ENGR 272, ENGR 274 (3)	13
Total Units Required	13

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 coursework 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 coursework before becoming classified. Students admitted in conditionally classified status may petition for classified status when coursework in deficient areas has been completed, when they have satisfied the 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 Studies and Research website at www.sjsu.edu/gradstudies. 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	6-9
ENGR 201, ENGR 202 or ENGR 203	
Option Core	3-9
Approved Option Electives	9-15
Thesis or Project	3-6
ENGR 281 (1) then ENGR 298 (2); or ENGR 281 (1) then ENGR 299 (1-6); or ENGR 295A (3) then ENGR 295B (3)	
Total Units Required	30

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

- Embedded Systems (Offered as a special off-campus program)
- Electronic Materials and Devices
- Engineering Management
- Environmental Health and Safety
- 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/).

Courses

GENERAL ENGINEERING

LOWER DIVISION

ENGR 005. Science of High Technology

Scientific principles underlying commonly used high technology devices and systems such as the computer, cell phone, IPODS, cameras, and the Internet. Emphasizes practical applications of scientific principles to contemporary engineering products and services.

3 units

ENGR 008. Engineering Success

Combination of workshop and lab exercises emphasizing group interaction, communications skills and problem solving for incoming students. May be repeated for a total of 2 units.

Activity 2 hours.
Repeatable for credit
Credit / No Credit
1 unit

ENGR 010. Introduction to Engineering

Introduction to engineering through hands-on design projects, case studies, and problem-solving using computers. Students also acquire non-technical skills, such as team skills and the ability to deal with ethical dilemmas.

Prerequisite: Open to all majors; high school algebra, geometry and trigonometry
Lecture 2 hour/lab 3 hours.
3 units

ENGR 090W. Technical Writing Workshop

Weekly writing and speaking practice to develop technical communication skills. Repeatable not for graduation credit.

Prerequisite: Referral by engineering faculty.
Repeatable for credit
Credit / No Credit
2 units

UPPER DIVISION

ENGR 100W. Engineering Reports

Regular technical writing assignments and company-focused oral presentations while integrating effects of environmental factors as they relate to products, systems and engineering processes.

Prerequisite: ENGL 1B (with a grade of C or better); Completion of core GE, satisfaction of Writing Skills Test and upper division standing.
ABC/No Credit
GE: Z+R
3 units

ENGR 102. Renewable Energy Engineering

Essentials of fluid dynamics and heat transfer. Solar thermal theory and applications. Photovoltaic generation. Biomass and biofuels. Fuel cells. Energy systems, generation and storage.

Prerequisite: CHEM 1A and (PHYS 71 or PHYS 52 or PHYS 2B); Upper division standing in engineering.
3 units

ENGR 103. Life Cycle Engineering

Life cycle analysis of products focused on the contexts of reducing energy and the carbon footprint. Methods to analyze and evaluate the environmental impacts of engineering activities. Interdisciplinary case studies and projects related to life cycle engineering.

Prerequisite: ENGR 102 or ME 172 or ENVS 133.
3 units

ENGR 115. Introduction to Bioengineering

Introduction to principles of bioengineering; interaction of engineering with biology for societal benefit; topics include introductory cell and molecular biology, biomechanics, biomaterials, biopharmaceuticals, bioinformatics, instrumentation including diagnostic and analytical techniques, FDA regulations, clinical trials, and ethical issues.

Prerequisite: ENGR 10, BIOL 54, CHEM 1A, CHEM 1B, BIOL 23, all with a grade of C or better, or instructor consent.
4 units

ENGR 157. Community Action/Community Service

See EDUC 157.
Repeatable for credit
GE: S
3 units

ENGR 177. Physiology for Engineers

See BIOL 177.
3 units

ENGR 180. Individual Studies

Individual work on special topics, by arrangement.
Prerequisite: Upper division standing and instructor consent.
Repeatable for credit
Credit / No Credit
1-3 units

ENGR 184. Business Strategy in Practice in Technology Enterprise

This course provides students with the practical tools and assessment for applying their business acumen. The first half introduces the students to standard business assessment tools that feed business strategies, such as marketing, business development and M & A. The second half of the course is comprised of developing the basic elements of a formal Business Plan and providing both comprehension and application levels of learning of business strategy.

Prerequisite: BUS 193 or ENGR 193 and BUS 181.
3 units

ENGR 194. Business Organization and Management of Technology Enterprise

This course provides a “top down” overview of how commercial business works, including the business components: Corporate Environments, Human Resources, Legal, Marketing, Customer Insights, Management/Leadership. Communication and business soft skills will be covered providing a foundation for a solid business acumen. All class sessions focus on local and global perspectives.

Prerequisite: BUS 193 or ENGR 193.
3 units

ENGR 195A. Senior Software Engineering Design Project I

Individual or group design projects. Proposal preparation with plans and specifications; oral and written reports; professional seminars.

Prerequisite: CMPE 120, ENGR 125, CMPE 135, ENGR 142, CMPE 131, CMPE 138, ISE 130, ENGR 100W, major form on file and senior standing.
Repeatable for credit
1 unit

ENGR 195B. Senior Software Engineering Design Project II

Construction, testing and evaluation of the design from ENGR 195A culminating in demonstrations and written and oral presentations to faculty and peers.

Prerequisite: ENGR 195A (with a grade of “C” or better).
Repeatable for credit
3 units

ENGR 197. Cooperative Education Project

Part or full-time on-site paid work experience based on a pre-approved project assignment in area of student's career objective. Oral presentations, written final report and evaluation by project supervisor. Approved technical elective.

Prerequisite: Instructor consent.

3 units

GRADUATE

ENGR 200W. Engineering Reports and Graduate Research

Graduate level technical writing workshop designed to develop advanced communication skills that will readily transfer to the engineer's professional needs, along with research methodologies, copyright issues, and proper documentation for the master's thesis project.

Prerequisite: Graduate standing and completion of an undergraduate writing course.

ABC/No Credit

3 units

ENGR 201. Engineering Analysis

Mathematical techniques for solving engineering problems. Topics include linear systems analysis, probability and statistics, and differential equations. Applications include modeling and simulation, optimization, projection, experimental design. Several computer projects are required.

Prerequisite: Graduate standing or instructor consent.

3 units

ENGR 202. Systems Engineering

Large scale system design and development. Integrated approach including mission statement, synthesis of design concepts, tradeoff studies, risk assessment and interactions encountered in the optimal design, development, manufacture and test of systems.

Prerequisite: Graduate standing or instructor consent.

3 units

ENGR 203. Engineering Management

The management of technical activities. Planning, organization, resource allocation, strategy development, leadership, team building, decision-making, project management, communications, cost assessment/analysis.

Prerequisite: Graduate standing and instructor consent.

3 units

ENGR 236. Design for Manufacturability

Knowledge-based design, value engineering, DFM methodologies, robust design, process and materials selection, design constraints, design for assembly. Techniques of quality engineering, CAD/CAM integration and simultaneous engineering, cost estimating, activity-based costing, case studies, team projects.

Prerequisite: Principles of Design and Manufacturing Processes.

3 units

ENGR 240. Introduction to Microelectronic Packaging

Fundamental principles of packages and packaging requirements for microelectronic circuitry. Topics include: survey of package types, future trends, design, fabrication, processing, assembly, electrical requirements, reliability and testing.

Prerequisite: Graduate standing or instructor consent.

3 units

ENGR 242. Electrical Requirements for Microelectronic Packaging

Study of high speed requirements, design and characterization. Topics include: high speed system design, packaging and interconnect properties, modeling and simulation, transmission line effects and measurement techniques.

Prerequisite: ENGR 240 or instructor consent.

3 units

ENGR 244. Mechanical and Thermal Requirements for Microelectronic Packaging

Study of thermal and mechanical requirements for microelectronic packaging, covering fundamentals of heat transfer, strength of materials, thermal stresses, vibration theory and modeling. Application of fundamental theories to package design.

Prerequisite: ENGR 240 or instructor consent.

3 units

ENGR 271. Passive Optical Sensing

An introduction to passive optical sensing systems, including application areas, phenomenology and component/technology performance analysis. Detector types, principles, noise and sensor cooling issues will be addressed. Case studies and system analysis of complete passive optical sensing systems included.

Prerequisite: Instructor consent.

3 units

ENGR 272. Biomedical Devices Design and Principles

Principles involved in designing medical devices to function reliably in human body; interaction between synthetic and biological materials; use of design principles during conception and development of medical devices; effect of design on manufacture clinical performance, reliability and quality/regulatory assurance.

Prerequisite: Graduate standing or instructor consent.

3 units

ENGR 273. Active Optical Sensing

Fundamentals of active optical sensing systems, including application areas, phenomenology and component/technology performance analysis. Laser fundamentals/properties (emphasis in solid-state and fiber lasers), light detection and ranging (LIDAR) principles and sensor cooling/noise. Direct detection vs. heterodyne detection and case studies.

Prerequisite: ENGR 271.

3 units

ENGR 274. Regulatory, Clinical and Manufacturing Aspects of Medical Devices

FDA regulations related to medical devices; planning and implementation of clinical trials; sterilization techniques; failure mode analysis; quality control for medical device manufacture; intellectual property; field trips to device manufacturers.

Prerequisite: Graduate standing; instructor consent.

3 units

ENGR 281. Master's Project/Thesis Preparation Seminar

Preparation for project or thesis research, including development of scope, assembly of committee, preparation of schedule, completion of literature survey, completion of introductory chapter for final report, and research proposal examination at the end of the course.

Prerequisite: Complete common and option core courses, a grade of "B" or better in ENGR 200W or any GS&R approved course that satisfies the Graduate Writing Competency Requirement and approved candidacy form on file.

Lab 3 hours.

ABC/No Credit

1 unit

ENGR 295A. Project I

In-depth developmental engineering work relating to problems of interest to an individual or a group of students. Project includes proposal formulation, analysis, design, implementation, and testing.

Prerequisite: Admission to Candidacy for Master's Degree in Engineering.

Lab 9 hours.

3 units

ENGR 295B. Project II

A continuation of CMPE 295A. Students complete the in-depth project, write a detailed project report and make a comprehensive presentation and demonstration of project.

Prerequisite: CMPE 295A.

Lab 9 hours.

3 units

ENGR 297C. Special Topics in Systems Engineering

Special seminars and discussions to augment regularly-scheduled graduate courses. Emphasis on systems, process, product, and service integration in short-life cycle product and service industries using systems, concurrent engineering, and cost of ownership principles.

Prerequisite: Instructor consent.

3 units

ENGR 297D. Special Topics in Manufacturing Engineering

Special seminars and discussions to augment regularly-scheduled graduate courses. Emphasis on emerging technologies, entrepreneurship, marketing, communication skills, technical writing, proposal preparation and other timely subjects.

Prerequisite: ENGR 203 or instructor consent.

1-3 units

ENGR 297I. MSE Internship

Student will be employed in an industry as an intern, working in an engineering area to their MSE option. This course supplements and supports the student's program of study. Course is repeatable for a total of 9 units.

Prerequisite: Students must have graduate standing.

Repeatable for credit

Credit / No Credit

3 units

ENGR 298. Master's Project

Completion of an in-depth project, a detailed project report, followed by a comprehensive presentation and demonstration of project.

Prerequisite: ENGR 281, satisfaction of English Proficiency requirement, advancement to candidacy.

Lab 6 hours.

ABC/No Credit

2 units

ENGR 299. Master's Thesis

Master's thesis work in engineering.

Prerequisite: Admission to candidacy for master's degree; written contract with thesis advisor and graduate coordinator.

Lab 9 hours.

Repeatable for credit

Credit/No Credit/Report in Progress

1-6 units

Geography

College of Social Sciences

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Associate Professors

Richard Taketa, Chair

Assistant Professors

Kathryn Davis
Gary Pereira

Adjunct Professors

Cynthia Schmidt

Curricula

- BA, Geography
- Minor, Geography
- Minor, Geographic Information Science
- MA, Geography
- Certificate, Geographic Information Science

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	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	3
GEOG 195 or STAT 095 (GIS concentration requires GEOG 195)	
Requirements in the Major	48
Core Geography Courses	21
These courses are to be taken by all majors.	
GEOG 001, GEOG 010, GEOG 101, GEOG 115, GEOG 135 and GEOG 170 (18); GEOG 186 or GEOG 187 (3)	
Emphases in Geography	27
Select one of the three following emphases.	
Global Analysis	27
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	27
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 6	
Capstone Course	3
GEOG 199	
Electives	22
Total Units Required	120

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 1, 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
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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

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 Studies and Research website at www.sjsu.edu/gradstudies. 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

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	3
GEOG 290	
Geography Seminars	6
Complete two courses from: GEOG 239, GEOG 279, GEOG 282	
Thesis	6
GEOG 299	
Electives	15
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.	
Plan B (without Thesis)	30
Core Seminar	3
GEOG 290	
Geography Seminars	9
Complete three courses from: GEOG 239, GEOG 279, GEOG 282	
Electives	18
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.	
Total Units Required	30

Courses**GEOGRAPHY****LOWER DIVISION****GEOG 001. Geography of Natural Environments**

Atmospheric, biologic and geologic processes that create the natural environments of the world. Discovery of local, regional and global patterns in the location and distribution of environmental phenomena, and the human modifications of natural environments.

CAN GEOG 2
GE: B1
3 units

GEOG 010. Cultural Geography

The human population studied through the perspective of cultural groups, their institutions and geographic distributions, how different people occupy, use, and modify their environment, and the interaction of individuals from one group with those of another.

CAN GEOG 4
GE: D1
3 units

UPPER DIVISION**GEOG 101. Global Geography**

Comparative geography of our world: regions and countries, natural environments and resources, settlements and land use, cultural diversity, economic and political patterns.

Prerequisite: Sophomore or upper division standing.
GE: D2
3 units

GEOG 105. Urban Geography

Spatial patterns in the urban environment: City function and morphology; population patterns and functional zonation; analysis of recent changes.

Prerequisite: Upper division standing or instructor consent.
3 units

GEOG 107. Mapping the World

Finding, preparing, and using maps, satellite and aerial images, and spatial data to create effective presentations. Includes a basic introduction to geographic visualization through cartography, geographic information systems, and remote sensing for professionals outside geography.

Prerequisite: Upper division standing or instructor consent.
3 units

GEOG 112. Nations, Cultures, and Territorial Disputes

In a world with rapidly diminishing resources new conflicts are emerging based on factors such as ethnicity, economic opportunity, religion, and nationalism. Explore global circumstances leading to conflict.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.
GE: V
3 units

GEOG 115. Geography of the Global Economy

Exploration of contemporary global economy using variety of analytical approaches developed by geographers. Provides geographic perspective on world economy and environmental issues within a spatial context.

Prerequisite: Upper division standing. GEOG 101 recommended.
3 units

GEOG 120. Food Supply and Agricultural Systems

Geography of world agriculture and nutritional needs of a growing world population. Comparison of traditional and modern agricultural systems in their use of resources and technologies. Effectiveness in meeting demands and sustainability.

Prerequisite: Upper division standing or instructor consent.
3 units

GEOG 121. Population and Global Change

Impact of population changes on countries, regions, and their environments. Demographic comparisons of developed and developing societies from perspectives of land use, economics and politics.

Prerequisite: Upper division standing.
3 units

GEOG 123. Geography for K-12 Teachers

Geography for future K-12 teachers. Topics include mapping, places, and regions, and themes of human, physical and historical geography. Overview of geography in the California K-12 Frameworks as well as the geography in the California teacher credential examinations.

Prerequisite: Upper division standing or instructor consent.
3 units

GEOG 124. Topics in Physical Geography

Interactions between humans and environment from a geographical perspective.

Prerequisite: GEOG 1 or instructor consent.
Repeatable for credit
3 units

GEOG 125. Selected Topics in Human Geography

Changing topics in human geography.

Prerequisite: Upper division standing.
Repeatable for credit
3 units

GEOG 130. Natural Resources

Geography of economic, environmental, political and technological factors that define natural resources and affect their availability and use. Focus on water, food-producing and energy resources.

Prerequisite: Upper division standing or instructor consent.
3 units

GEOG 132. Creating Built Worlds

See ANTH 132.

3 units

GEOG 135. Qualitative Methods in Geographical Research

Development of skills required for geographical research and writing. Library research, oral presentations, variety of writing assignments dealing with diverse geographic problems.

Prerequisite: ENGL 1B.
3 units

GEOG 137. California in Historical and Social Scientific Perspectives

See SOCS 137.

3 units

GEOG 138. United States in Historical and Social Science Perspectives

See SOCS 138.

GE: S

3 units

GEOG 139. The World in Historical and Social Science Perspectives

See SOCS 139.

Repeatable for credit

GE: V

3 units

GEOG 140. The United States

Geography of the U.S. emphasizing the continuing changes of America's places and regions. Themes include environmental, culture, economic, and social geographies at community, regional and national scales.

Prerequisite: Upper division standing or instructor consent.

3 units

GEOG 145. California

Origins and patterns of California's diverse landscapes, including the geography of natural environments and resources, economic regions, land use, cultural patterns, political trends and the future.

3 units

GEOG 150. Latin America and the Caribbean

Geography of Mexico, Central America, Caribbean, and South America. Themes include environmental, historical, political, and economic geographies at the scales of the region, its countries, and selected cities.

Prerequisite: Upper division standing or instructor consent.

3 units

GEOG 155. Europe

Geography of Western and Central Europe. Themes include environmental, historical, political, and economic geographies at the scales of the region, its countries, and selected cities. Particular emphasis is given to the increasing economic and political unity through the European Union.

Prerequisite: Upper division standing or instructor consent.

3 units

GEOG 160. East and South Asia

Geography of Eastern, Southeastern, and Southern Asia. Themes include environmental, historical, political, and economic geographies at the scales of the region, its countries, and selected cities. Particular emphasis is given to comparing and analyzing the variable rates of economic progress across the region.

Prerequisite: Upper division standing or instructor consent.

3 units

GEOG 165. National Parks

Selected U.S. National Parks and Monuments - the physical processes involved in their evolution; unique setting and character; the modern societal impact and attendant problems.

Prerequisite: Upper division standing or instructor consent.

3 units

GEOG 168. Sub-Saharan Africa

Regional study of environments, as well as cultural, economic and political geography of Africa south of the Sahara. Special attention given to geographic factors in the progress of less developed countries.

3 units

GEOG 170. Introduction to Mapping and Geographic Information Systems

Foundations of the mapping sciences and geographic information systems. Basics of earth measurement, location and mapping. Thematic map display and analysis. Application through a variety of laboratory experiences.

Prerequisite: Geog 1 or instructor consent.

Lecture 2 hours/lab 3 hours.

3 units

GEOG 171. Map and GIS Analysis

Maps as tools of geographic expression and research. Introduction to spatial analysis through geographic information systems. Data collection and description; measuring absolute and relative location, patterns, interaction and association.

Prerequisite: GEOG 1, GEOG 170 or instructor consent.

Lecture 2 hours/lab 3 hours.

3 units

GEOG 172. Cartography: Compilation and Presentation

Techniques of compilation, design, construction and production. Lab projects applying computer graphics and geographic information systems to the effective presentation of geographic themes and information.

Prerequisite: GEOG 1 and GEOG 170 or instructor consent.

Lecture 2 hours/lab 3 hours.

3 units

GEOG 173. Cartography: Dynamic and Interactive Mapping

Design and implementation of dynamic and interactive presentations for visualizing geographic information. Lab projects creating animated and multimedia presentations. Designing user-interfaces for interactive mapping systems.

Prerequisite: GEOG 170, GEOG 172 or instructor consent.

Lecture 2 hours/lab 3 hours.

3 units

GEOG 175. Geographic Information Systems: Project Development

Creation of geographic information system databases and application software to solve specific problems in such areas as resource and facilities management, demographic analysis and planning.

Prerequisite: Geog 170 or instructor consent.

Lecture 2 hours/lab 3 hours.

3 units

GEOG 178. Geographic Information Systems Project

Develop geographic database, web mapping, interactive mapping, and/or remote sensing solutions to a GIS problem. Identification of appropriate methods, and design, implementation, testing, and documentation of solution.

Prerequisites: GEOG 170 and GEOG 171; 3 units from GEOG 173, GEOG 175, GEOG 181, or GEOG 182; or instructor consent.

3 units

GEOG 180. Individual Studies

Student-initiated in-depth study of a mutually agreeable topic conducted under faculty guidance.

Prerequisite: Supervisor and department chair approval.

Repeatable for credit

Credit / No Credit

1-4 units

GEOG 181. Remote Sensing: Basic Theory and Image Interpretation

Acquisition, interpretation and applications of imagery obtained from both airborne and satellite platforms. Includes visual interpretation and analysis of airphotos and non-photographic images, such as radar and thermal infrared. Remotely-sensed imagery as a source for mapping and geographic information systems.

Prerequisite: GEOG 170 or instructor consent.

Lecture 2 hours/lab 3 hours.

3 units

GEOG 182. Remote Sensing: Digital Analysis

Digital image systems and application to earth resource problems. Emphasis on non-photographic sensors, including digital manipulation and image enhancement. Integration of digital imagery with geographic information systems.

Prerequisite: GEOG 170 or instructor consent.

Lecture 2 hours/lab 3 hours/field trips.

3 units

GEOG 186. Field Study in Physical Geography

Field research methods in physical geography, including biogeography, hydrology, soils, geomorphology, and human-environment studies. Mapping, GPS, landscape remote sensing, and field measurements. Local field trips and projects tailored to class interests.

Prerequisite: 6 units of upper division geography courses.

Credit / No Credit

3 units

GEOG 187. Field Study in Human and Historical Geography

Introduction to field methods in human and historical geography. Field trips, archival research, and student projects provide practical and applied skills and an informed view of the relationships between people and their environments.

Prerequisite: 6 units of upper division geography courses.

Credit / No Credit

3 units

GEOG 195. Spatial Analysis

Quantitative analysis of geographic information, including spatial statistics and analytical mapping; application of descriptive and inferential statistics to geographic problems.

Prerequisite: GEOG 170 and GEOG 171 or instructor consent.

3 units

GEOG 197. Geography Internship

Work/activity with professional application in off-campus establishment or agency. Course requirements and units determined in consultation with faculty advisor and work/activity supervisor.

Prerequisite: 12 units of geography.

Repeatable for credit

Credit / No Credit

1-6 units

GEOG 199. Senior Seminar

Capstone course examining the history of geographic thought and themes with emphasis on critical assessment of issues affecting current trends; objective of placing undergraduate experience in a professional context.

Prerequisite: Senior standing in geography.
Credit / No Credit
3 units

GRADUATE**GEOG 239. Geographic Information Technology**

Research in application of technology to the design and implementation of computer mapping, remote sensing, and geographic information systems. Includes spatial database design issues, spatial processing algorithms, and cartographic visualization. Research project and paper. May be repeated for credit when offered as a different technology.

Prerequisite: Instructor consent.
Repeatable for credit
3 units

GEOG 279. Geographic Information Science Applications

Research in applications of geographic information science in such areas as urban spatial analysis, environmental analysis, geo-demographic analysis, regional analysis, facilities management, and geographic education. Research project and paper. May be repeated for credit when offered as a different technology.

Prerequisite: Instructor consent.
Repeatable for credit
3 units

GEOG 282. Advanced Geographic Techniques

Specific topics in display and analysis of geographic information. Possible topics include advanced spatial analysis, cartographic representation, user-interface design, internet map server technology. May be repeated for credit when offered as a different technique.

Prerequisite: GEOG 170 or instructor consent.
Repeatable for credit
3 units

GEOG 286. Geographic Information Systems: Project Management

Principles of project management applied to geographic information systems projects. Requirements assessment, estimating, scheduling, system design, and acceptance testing. Students will negotiate, plan and execute projects for outside agencies. May be repeated when course content changes

Prerequisite: GEOG 175 or instructor consent.
Repeatable for credit
3 units

GEOG 290. Seminar in Research Design for Geographic Information Science

Introduction to research in geographic information science. Includes definition of research problems, design of research project, identification of appropriate methodologies for acquiring, organizing and analyzing data, and presentation of research results. Research paper.

Prerequisite: Instructor consent.
3 units

GEOG 298. Special Study

Advanced individual research and projects unavailable in other department offerings conducted under the supervision of a faculty member.

Prerequisite: Approval of supervising faculty member and department chair.
Repeatable for credit
Credit / No Credit
1-4 units

GEOG 299. Master's Thesis or Project

Prerequisite: Approved master's degree candidate.
Repeatable for credit
Credit/No Credit/Report in Progress
1-6 units

Geology

College of Science

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Professors

David W. Andersen
Ellen P. Metzger
Robert B. Miller, Graduate Advisor
June A. Oberdorfer
Donald L. Reed
Richard L. Sedlock, Chair

Associate Professors

Paula Messina
Jonathan Miller, Undergraduate Advisor

Assistant Professors

Emmanuel Gabet

Curricula

- BS, Geology
- BA, Earth Science
- Minor, Geology
- MS, Geology

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
Requirements in the Major	52
Core Geology Sequence	29
GEOl 003, GEOl 004L, GEOl 007, GEOl 028, GEOl 100W, GEOl 120, GEOl 122, GEOl 124, GEOl 125 and GEOl 129	
Geology Electives	23
Complete twenty-three units from: GEOl 126, GEOl 127, GEOl 129, GEOl 130, GEOl 132, GEOl 134, GEOl 135, GEOl 136, GEOl 137, GEOl 138, GEOl 140, GEOl 147, GEOl 174, MS 141	
Supporting Courses Required	21
CHEM 001A and CHEM 001B..... 10	
PHYS 002A and PHYS 002B (3) or PHYS 050 (4) and PHYS 051 or PHYS 052 (4)..... 8	
MATH 030 (with grade of "C-" or better) 3	
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 (8), PHYS 050 and PHYS 051 (8) or PHYS 052 (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 Studies and Research website at www.sjsu.edu/gradstudies. 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.

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**Courses****GEOLOGY****LOWER DIVISION****GEOL 001. General Geology**

Examination of geologic processes and materials, including volcanoes, earthquakes, rock formation, oceans, streams, and plate tectonics and their importance to society.

Lecture 3 hours/field trips.

GE: B1

3 units

GEOL 001L. General Geology Laboratory

Supplement to general lecture courses in Earth science or geology.

Pre/Corequisite: GEOL 2, GEOL 1, GEOL 6 or GEOL 111.

Lab 3 hours.

1 unit

GEOL 002. Introduction to Earth Science

Unified interdisciplinary study of the Earth. Overview of geologic processes, emphasizing the place of humans in space and time and the origin and distribution of resources.

3 units

GEOL 003. Planet Earth

Origins and processes of Earth's interconnected physical and chemical systems, including aspects of astronomy, geology, meteorology, and oceanography. Impacts of these systems on humans, and of humans on the systems.

GE: B1

3 units

GEOL 004L. Planet Earth Laboratory

Hands-on investigations, measurements, and analysis of Earth's materials, processes, and hazards. Supplements general lecture courses in Geology.

Lab 3 hours.

GE: B3

1 unit

GEOL 005. Human Development and the Natural World

Introductory course examining the role of the natural world on the physiological, social, and psychological development of human beings within the context of the environmental, social, and academic community system.

GE: E

3 units

GEOL 006. Geology of California

California's geology, illustrating physical processes, landscapes, geologic history and resources. California's seismic, volcanic, landslide and flooding hazards, and their impact on society.

Lecture 3 hours/field trips.

GE: B1

3 units

GEOL 007. Earth, Time and Life

Earth's geosphere: processes that act on it and materials that comprise it; how rocks and fossils are used to interpret the history of Earth's geosphere, atmosphere, oceans, and life forms.

Lecture 3 hours/lab 3 hours.

GE: B1+B3

4 units

GEOL 010. Planet Earth

The dynamic interplay of processes that shape the Earth system—the solid planet, its atmosphere, its oceans, and the universe that spawned and supports it. Investigations of humanity's impact on the Earth system, and its impact on us.

Lecture 2 hours/lab 3 hours/field trips.
3 units

GEOL 028. Geology Outdoors

Hands-on introduction to geology in a variety of field settings. Develop your observational skills at several of California's spectacular geologic attractions. Includes one-day field trips, a multi-day field trip, and short written reports.

Prerequisite: Completion of or co-enrollment in GEOL 3, GEOL 4L, and GEOL 7.
Credit / No Credit
1 unit

UPPER DIVISION**GEOL 100W. Writing Workshop**

Advanced writing, including planning and preparation of scientific reports. Improvement of skills needed for writing scientific reports, project proposals and resumes through practice and evaluation.

Prerequisite: ENGL 1B (with a grade of C or better); Completion of core GE, satisfaction of Writing Skills Test and upper division standing. Completion of or co-enrollment in GEOL 125, or instructor consent.
ABC/No Credit
GE: Z
3 units

GEOL 102. Historical Geology

Principles of geology used in interpretation of the history of the Earth as revealed in rocks and their fossils.

Lecture 2 hours/lab 3 hours/field trips.
3 units

GEOL 103. Earth Systems and the Environment

Fundamental earth/space science concepts. Emphasis on active learning and guided inquiry. Recommended for students preparing for multiple subject credential.

Prerequisite: Chemistry 30A or Physics 1; Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.
Offered through International and Extended Studies.
Repeatable for credit
GE: R
3 units

GEOL 104. Earth Science Teacher Enhancement

A thematic approach to the study of regionally significant topics, including earthquakes, landslides and volcanoes. Development of hands-on classroom activities. Normally offered through University Continuing Education. Field trips.

Prerequisite: Teaching credential and instructor consent.
Offered through International and Extended Studies.
Repeatable for credit
Credit / No Credit
0.5-3 units

GEOL 104L. Earth Science Teacher Enhancement Laboratory

Laboratory-based studies to supplement concepts developed in Geol 104. Normally offered through University Continuing Education.

Prerequisite: Instructor consent.
Lab 3 hours.
Offered through Continuing Education.
Repeatable for credit
1 unit

GEOL 105. General Oceanography

Scientific examination of the impact of oceans on global society, and human impacts on the oceans, through classroom discussions, computer exercises and field trips.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.
Lecture 3 hours/field trips.

GE: R
3 units

GEOL 107. Prehistoric Life

Integrated interdisciplinary examination of the fossil record, including information from the fields of paleontology, genetics and cosmology that aids in the understanding of organic evolution and periodic massive extinctions.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.
GE: R
3 units

GEOL 108. Water, Ecosystems and Society

Interdisciplinary investigation of hydrologic systems and their interactions with biologic communities and with society. Streams, lakes, estuaries, groundwater and the safety and protection of water resources.

Prerequisite: Upper division standing.
Lecture 3 hours/field trips.
3 units

GEOL 111. Geology and the Environment

The effect of Earth processes on humans and their structures. Environmental problems related to earthquakes, landslides, minerals, energy, water and urban growth.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.
Lecture 3 hours/field trips.

GE: R
3 units

GEOL 112. Hazards, Risks of Earthquakes and Volcanoes

How, where and why earthquakes and volcanic eruptions occur. Analysis of hazards posed by earthquakes and volcanoes. Risks incurred by humankind due to these hazards. Minimizing risk; economic, social and political problems associated with earthquakes.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.
GE: R
3 units

GEOL 130. Marine Geology

Introduction to the geology of continental margins and ocean basins. Discussions focus on crustal structures and the effect of plate tectonics and oceanographic processes on modern marine sedimentation.

GEOL 120. Fundamentals of Mineralogy

Laboratory course designed to give students basic skills for identifying minerals and basic understanding of geologic processes that form minerals. Emphasis is on hand specimen and microscope identification.

Prerequisite: GEOL 3, GEOL 4L and GEOL 7.
ABC/No Credit
2 units

GEOL 122. Mineralogy and Petrology I

Identification of minerals and rocks in hand sample and under the microscope. Processes of formation, description, and classification of igneous, sedimentary and metamorphic rocks.

Prerequisite: GEOL 120; completion of or co-enrollment in CHEM 1A.
Lecture 3 hours/lab 3 hours.
4 units

GEOL 124. Sedimentology and Stratigraphy

Study of the origin and description of sediment and sedimentary rocks; study of the formation, sequence, and correlation of stratified rocks.

Prerequisite: GEOL 3, GEOL 4L, GEOL 7.
Misc/Lab; Lecture 2 hours/lab 3 hours.
3 units

GEOL 125. Structural Geology

Recognition, interpretation and representation of structures of the Earth's crust. Analysis of basic principles of rock deformation.

Prerequisite: MATH 19, GEOL 1 or GEOL 3, GEOL 4L, GEOL 7, GEOL 28.
Lecture 3 hours/lab and field 3 hours.
4 units

GEOL 126. Paleontology and Stratigraphy

Study of the major groups of invertebrate fossils and their use in geological studies; principles of stratigraphy, including seismic stratigraphy.

Prerequisite: GEOL 3, GEOL 4L, and GEOL 7.
Lecture 2 hours/lab and field trips 3 hours.
3 units

GEOL 127. Tectonics

Description of large-scale features of the Earth's crust and upper mantle and the processes which formed them. Emphasis on plate tectonics and its implications for the evolution of North America.

Prerequisite: GEOL 100W, GEOL 122, GEOL 124, GEOL 125.
3 units

GEOL 128. Geologic Field Techniques

Introduction to geologic mapping and use of geologic field instruments.

Prerequisite: GEOL 124 and GEOL 125.
Lecture 1 hour/field 6 hours.
3 units

GEOL 129. Field Geology

Geologic field mapping and interpretation of geologic and tectonic history. Students stay at camp sites that vary from year to year.

Prerequisite: GEOL 100W, GEOL 122, GEOL 124, GEOL 125.
Lab 6-12 hours.
Repeatable for credit
2-4 units

GEOL 130. Marine Geology

Introduction to the geology of continental margins and ocean basins. Discussions focus on crustal structures and the effect of plate tectonics and oceanographic processes on modern marine sedimentation.

Prerequisite: GEOL 3, GEOL 4L, and GEOL 7.
Lecture 2 hours/lab 3 hours.
3 units

GEOL 132. Mineralogy and Petrology II

Investigations of minerals and rocks in hand sample and under the microscope. Introductions to petrogenesis, lithospheric evolution, and other advanced petrologic topics.

Prerequisite: GEOL 122.
Lecture 3 hours/lab 6 hours.
5 units

GEOL 134. Geomorphology

Earth's surficial processes and landforms; effects of tectonics, climate and geology; landscape evolution. Landform interpretation using maps; surface water hydrology; applications.

Prerequisite: Geol 3 and Geol 4L, Geol 7, or instructor consent.
Lecture 2 hours/lab 3 hours.
3 units

GEOL 135. Geochemistry

Application of geochemical and thermodynamic principles to solution of geologic problems. Topics include: equilibrium-disequilibrium reactions, major and trace element behavior, isotope systematics and modern analytical methods.

Prerequisite: GEOL 122 and CHEM 1B (or equivalent).
Lecture 3 hours/lab 3 hours.
4 units

GEOL 136. Map and Aerial Photo Interpretation

Use of topographic maps, aerial photographs and satellite imagery to interpret geologic features. Introduction to computer mapping applications in geology.

Prerequisite: GEOL 125, GEOL 134 or instructor consent.
Lecture 2 hours/lab 3 hours.
3 units

GEOL 137. Introduction to GPS/GIS for Geologic Applications

Introduction to digital geologic mapping and analysis using Trimble GPS and ArcView GIS.

Prerequisite: GEOL 3, GEOL 4L, and GEOL 7, or instructor consent. Computer literacy assumed.
Lecture 2 hours/lab 3 hours.
4 units

GEOL 138. Hydrogeology

Geological principles of the occurrence, accumulation and migration of water; groundwater as a manageable resource; groundwater geochemistry and contaminant transport.

Prerequisite: GEOL 125 or instructor consent.
Recommend: MATH 32 and GEOL 135.
Lecture 3 hours/lab 3 hours.
4 units

GEOL 140. Principles of Engineering Geology

Qualitative and quantitative analysis of geologic factors influencing site selection, development and use; methods of data collection, interpretation and presentations.

Prerequisite: GEOL 125.
Lecture 3 hours/lab 3 hours.
4 units

GEOL 147. Introduction to Applied Geophysics

Introduction to modern geophysical techniques with emphasis and environmental applications. Field techniques and case histories.

Prerequisite: PHYS 2A and PHYS 2B (or equivalent); GEOL 100W.
Lecture 2 hours/lab 3 hours.
3 units

GEOL 150. Field Studies in Natural History

See BIOL 150.

Repeatable for credit
GE: B3
1-2 units

GEOL 168. Global Climate Change I

See COMM 168.
6 units

GEOL 168W. Global Climate Change II

See COMM 168W.

ABC/No Credit
GE: R+S+V+Z
3 units

GEOL 174. Hazardous Materials

See CHE 174.
3 units

GEOL 180. Individual Studies

Advanced lab or field work.

Prerequisite: Instructor consent.
Repeatable for credit
Credit / No Credit
1-3 units

GEOL 184. Directed Reading

Reading of books, journals and papers chosen to fill gaps in training. Evaluation through weekly reports and conference.

Repeatable for credit
Credit / No Credit
1-3 units

GRADUATE**GEOL 204. Earth Systems Science for Teachers**

Peer teaching and leadership instruction in earth science. Demonstrations, classroom activities, field projects and teaching strategies for K-12 teacher groups.

Prerequisite: Teaching credential and instructor consent.
Repeatable for credit
3 units

GEOL 205. Advanced Earth Science

Selected topics in earth science. Topics change with each offering.

Prerequisite: Instructor consent.
Repeatable for credit
1-3 units

GEOL 213. Advanced Igneous and Metamorphic Petrology

Igneous and metamorphic processes and the evolution of the lithosphere. Application of field, petrographic and chemical data to models of petrogenesis. Laboratory emphasizes microscope studies and computer modeling.

Prerequisite: GEOL 121 (or equivalent).
Lecture 3 hours/lab 3 hours; field trips.
4 units

GEOL 214. Sedimentary Petrology and Petrography

Petrographic study of sedimentary rocks with application of petrographic information to reconstructions of source terranes, depositional conditions and diagenesis. Discussion of nature and origin of carbonate and terrigenous components is emphasized.

Prerequisite: GEOL 124 and GEOL 213 or instructor consent.
Lecture 3 hours/lab 3 hours.
4 units

GEOL 220. Advanced Engineering Geology

Application of geologic and engineering concepts to construction practices and land use planning.

Prerequisite: GEOL 140 or instructor consent.
Lecture 3 hours/lab 3 hours; field trips.
4 units

GEOL 222. Advanced Sedimentary Geology

Analysis of sedimentary facies, patterns of facies architecture and major controls on evolution of sedimentary basins.

Prerequisite: GEOL 123 and GEOL 127.
Lecture 3 hours/lab 3 hours; field trips.
4 units

GEOL 231. Advanced Structural Geology

Analysis of deformed rocks with emphasis on deformation mechanisms, small-scale structures, shear zones, faults and folds. Techniques of strain analysis and analyzing structure on maps are emphasized in the laboratory.

Prerequisite: GEOL 125.
Lecture 3 hours/lab 3 hours.
4 units

GEOL 234. Advanced Geomorphology

Applications of geomorphology and Quaternary geology in evaluating landscape development. Topics include soil chronosequences, Quaternary dating methods, long-term flood frequency, active fault investigations. Field techniques and data analysis emphasized in laboratory.

Prerequisite: GEOL 134 or instructor consent.
Lecture 3 hours/lab 3 hours; 3-day field trip required.
4 units

GEOL 238. Advanced Hydrogeology

Numerical methods in groundwater modeling, vadose zone monitoring and transport and geochemistry of natural and contaminated waters.

Prerequisite: GEOL 138 or instructor consent.
Lecture 3 hours/lab 3 hours; field trips.
4 units

GEOL 255. Advanced Geology

Selected topics in geology. Topics change with each offering.

Prerequisite: Suitable background in geology.
Repeatable for credit
1-5 units

GEOL 285. Seminar

Fundamental problems in geology. Topics change with each offering. May be repeated when content changes.

Prerequisite: Instructor consent.
Discussion 2 hours.
Repeatable for credit
2 units

GEOL 298. Research

Advanced individual study in geology.

Repeatable for credit
Credit / No Credit
1-4 units

GEOL 299. Master's Thesis

Prerequisite: Admission to candidacy for the master's degree.
Repeatable for credit
Credit/No Credit/Report in Progress
1-4 units

Gerontology

College of Applied Sciences
and Arts

MacQuarrie Hall 407
408-924-2938

Other Faculty

Nancy Hikoyeda, Director

G

Curricula

- BS, Health Science,
Concentration in Gerontology
- Minor, Gerontology
- Certificate, Applied Social Gerontology

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 coursework 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 111 and GERO 133	
Electives	3
<i>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.</i> 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 post-baccalaureate 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.

Courses

GERONTOLOGY

LOWER DIVISION

GERO 015. Human Life Span

See HS 015.

GE: D1
3 units

GERO 099. Death, Dying and Religions

See RELS 099.

GE: E
3 units

UPPER DIVISION

GERO 102. Health Team Building

See HS 102.

3 units

GERO 107. Aging and Society

Social, psychological and physiological aging processes. Implications of aging for individuals and societies, with emphasis on issues related to diversity, equality and gender in the U.S.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: S
3 units

GERO 108. Health in Later Life

Normal age-related health changes and common illnesses in later life. Health status, behavior and attitudes of older adults. The continuum of health care services. Professional and ethical issues in service delivery.

Prerequisite: College biological sciences course.
3 units

GERO 111. Medical Ethics

See PHIL 111.

3 units

GERO 114. Psychology of Aging

See PSYC 114.

3 units

GERO 116. Aging and Nutrition

See NUFS 116.

3 units

GERO 117. Social Policy and Services in Aging

Social policy on aging from a historical perspective. Implications for service to the elderly. Indicators for future program projections.

Prerequisite: Upper division standing.
3 units

GERO 118. Long Term Care Services

History and organization of the continuum of long term care for U.S. families, financing and regulatory policies, and factors influencing the quality of care. Professional and ethical issues facing long term care providers.

Prerequisite: GERO 107 or HS 162.
3 units

GERO 122. Women in the Second Half of Life

The roles and problems of the older woman in a changing society. Societal attitudes, stereotypes, employment and interaction patterns. Opportunity for focus on specific areas of interest.

Prerequisite: Upper division standing.
3 units

GERO 127. Aging and Mental Health

Theories and concepts of psychological adaptation, common emotional problems, functional disorders and organic disorders in late life. Assessment, prevention and treatment of mental health problems of elderly individuals and their caregivers.

Prerequisite: PSYC 1 (or equivalent).
3 units

GERO 133. Gerontology Field Work

Supervised work experience in an organization providing services to older adults. Short-term projects, observation of organizational dynamics and individual skills development.

Prerequisite: Completion of 9 units in gerontology.
Repeatable for credit
Credit / No Credit
3 units

GERO 137. Families, Aging, and Diversity

Family relationships of older adults in diverse U.S. ethnic groups. Current patterns of family and formal assistance to elders with disabilities. Critical analysis of eldercare policies and services.

Prerequisite: Upper division standing.
3 units

GERO 156. Independent Living for the Aging and Disabled

See OCTH 156.
3 units

GERO 166. Medical Sociology

See SOCI 166.
3 units

GERO 180. Individual Studies

Individual work on special topics in gerontology by arrangement.

Prerequisite: Coordinator approval and upper division standing.
Repeatable for credit
Credit / No Credit
1-4 units

GERO 182. Ethnicity and Aging

See AAS 182.
3 units

GERO 185. Leisure, Recreation and Aging

See HRTM 185.
3 units

GRADUATE

GERO 210. Issues in Gerontology: Theory and Research

Interdisciplinary examination of current theories and research on biological, psychological and social aspects of aging. Application to issues faced by professionals working with elderly persons.

Prerequisite: One undergraduate gerontology course or instructor consent.
3 units

GERO 220. Gerontological Services Administration

Application of administrative principles and skills to services for older adults and their families in community and institutional settings. Covers planning, service delivery, human resource management, budgeting, marketing and evaluation.

Prerequisite: GERO 117, SCWK 250 or instructor consent.
3 units

GERO 230. Long Term Care: Organization and Administration

History and organization of residential and community-based long term care services, funding and regulatory policies, and factors affecting quality of care. Development of skills for effective management.

Prerequisite: One course in health services organization or instructor consent.
3 units

GERO 251. Social Work with Aging Populations

See SCWK 251.
3 units

GERO 260. Multidisciplinary Health Promotion in Later Life

See NUFS 260.
3 units

GERO 265. Seminar in Cognitive Disorders

See EDSP 265.
3 units

GERO 268. Lifespan Development Theory

See EDCO 268.
3 units

GERO 292. Graduate Internship in Gerontology

Supervised work experience in an organization serving older adults. Emphasis on the development of management, advanced clinical or applied research skills in multicultural settings. Ten hours a week for fifteen weeks.

Prerequisite: GERO 210 and HPRF 295 (may be taken concurrently with or following GERO 220).

Repeatable for credit
Credit / No Credit
3 units

GERO 298. Special Project

Supervised research in the field of gerontology to be taken only with approval of the program coordinator.

Credit / No Credit
3 units

GERO 299. Master's Thesis or Project

Supervised individual research in gerontology. Preparation for doctoral level study.

Prerequisite: Admission to candidacy for the master's degree and instructor consent.
Repeatable for credit
Credit/No Credit/Report in Progress
3-6 units

Global Studies

College of Social Science

210 N. Fourth Street, Suite 301
408-924-7197
408-924-7203 (Fax)
globalstudies@gs.sjsu.edu
<http://gs.sjsu.edu/>

Professors

Michael Conniff

Curricula

- BA, Global Studies
- Minor, Global Studies

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' coursework. 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 new 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.

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 115, 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 152, COMM 173, 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) 15

Total Units Required 15

Courses

GLOBAL STUDIES

LOWER DIVISION

GLST 001A. Introduction to Global Studies

Introduces students to the scope of global studies as seen from the social and cultural perspectives. Readings based on the best critical studies of globalization and its outcomes. Occasionally, visiting professors will give new academic approaches to this field.

3 units

GLST 001B. Introduction to Global Studies

Presents scientific ways for understanding global phenomena and for developing policy to achieve positive outcomes of globalization. Interdisciplinary approaches require new analytical models. Visiting professors will collaborate with instructor.

3 units

UPPER DIVISION

GLST 179. Capstone Seminar in Global Studies

Course is designed for majors to help them to gain coherence in their theoretical knowledge, factual grounding, international living, personal aptitudes, and career aspirations. It will also give them experience in interdisciplinary research through preparation of a major scholarly paper. The format includes discussion, group analysis, visiting professors, and individual work.

Prerequisite: Completion of GLST 1A, GLST 1B, senior standing.

3 units

GLST 187. Special Topics

Selected topics in Global Studies. Topics vary and will be announced each semester.

Prerequisite: Upper division standing.

Repeatable for credit

3 units

GLST 189. Global Experience

Required for Global Studies majors. Completion of Global Studies sponsored faculty-led international educational study, semester-long residence abroad, for formal study, research, service learning, or internship. Students will develop their programs with the advice and approval of the GLST advisor and the International Programs and Service office. Students may transfer in additional credits from approved study, with prior approval of the GLST advisor.

Prerequisite: Completion of GLST 1A and GLST 1B, junior standing.

3 units

Health Professions

College of Applied Sciences and Arts

MacQuarrie Hall 433
408-924-2900

Other Faculty

Caroline Fee, Associate Director

Curricula

- Minor, Health Professions
- Minor, Complementary and Alternative Health Practices
- Certificate, Complementary and Alternative Health Practices

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 – 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.

HPRF 135

Electives 12

Choose courses from at least three of the following five areas.

Complete twelve units from:

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

Occupational Therapy: 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.

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.

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.

Complete six units from:

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.

Courses**HEALTH PROFESSIONS****UPPER DIVISION****HPRF 100W. Writing Workshop**

Development of skills in scientific and technical writing. How to write a critical review of published writing, a business letter, a scholarly paper, and give an oral presentation.

Prerequisite: ENGL 1B (with a grade of C or better); Completion of core GE, satisfaction of Writing Skills Test and upper division standing.

ABC/No Credit

GE: Z

3 units

HPRF 134. Complementary and Alternative Health Practices

Philosophical, historical, clinical, and scholarly aspects of complementary and alternative medicine and associated health practices used in the US, with emphasis on scientific clinical investigation and evidence based efficacy.

Prerequisite: Completion of Core GE or instructor consent.

3 units

HPRF 135. Health Issues in a Multicultural Society

Multidisciplinary interpretation and evaluation of consumer health issues. Impact of cultural variables (including communication methods, socioeconomic status and traditional beliefs) on health and illness. Interaction of individuals in families and other groups.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: S

3 units

HPRF 180. Individual Studies

Individual work on special topics by arrangement.

Prerequisite: Upper division standing, instructor consent and division director approval.

Repeatable for credit

Credit / No Credit

1-5 units

GRADUATE**HPRF 221. Patient Education**

Theory relating to planning and implementing patient education programs. Aspects of training, behavior modification and working within the health care system.

3 units

HPRF 260. Multidisciplinary Health Promotion in Later Life

See NUFS 260.

3 units

HPRF 295. Research Methodology

Focus on general research methods such as the concept of scientific methods, the logic of research design and applicability of theoretical and experimental approaches in the health professions.

Prerequisite: STAT 95 (or equivalent).

3 units

Health Science

College of Applied Sciences and Arts

Division of Health Professions

MacQuarrie Hall 407
408-924-2970
www.sjsu.edu/healthscience

Professors

B. Burt Gerstman
Kathleen M. Roe, Chair

Associate Professors

Edward M. Mamary
Daniel P. Perales

Assistant Professors

Anne Roesler

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

HHealth 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, women's health, the environment, violence prevention, 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 Bachelor 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 select from one of four options: Option 1 – Health Science plus electives, Option 2 – Health Science plus a minor, Option 3 – Gerontology Concentration, Option 4 – Health Services Administration Concentration, or Option 5 – Health Science, Concentration in Health Professions.

Each of the Health Science options emphasizes a particular content area. Option 1, Health Science plus elective, emphasizes the populations, skills, and issues that prepare a graduate for work in a wide variety of

fields related to community health. Option 2, Health Science plus a Minor, allows individual study in areas complementary to the Health Science curriculum. Option 3, the Gerontology Concentration, helps students prepare for careers with the growing aging population, including health care, social services, and long term care. Option 4, the Health Services Administration Concentration provides entry-level training in the administration, design, financing, and delivery of health care in the United States. Option 5, the Health Professions Concentration enables specified health professionals to receive a bachelor's degree. Internships under the guidance of an experienced health professional are required for the concentrations and can be an elective in Option 1.

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 (i.e., Berryessa Health Fair, Walk for AIDS, serve meals at local shelters, community mapping), 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 and distance. 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 coursework. 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 and France.

Students may choose either a Graduate Project, Master's Thesis or Comprehensive Exam to fulfill the university's graduation requirement. The MPH program culminates 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, an international 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.

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
<i>Selected with major advisor approval. Choose one of the following options:</i>	
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

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

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

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

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); 3 additional graduate units approved by the department (3)	
Required Practicum	5
HS 291A, HS 291B and HS 291C	
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 Studies and Research website at www.sjsu.edu/gradstudies.

Note: Masters Theses and graduate projects may only be undertaken upon departmental approval and will require additional units.

Courses

HEALTH SCIENCE

LOWER DIVISION

HS 001. Understanding Your Health

Introductory course on the interdependence of the physiological, social and psychological factors influencing the healthy well-being of individuals throughout the life span. Emphasis is on identifying and utilizing both university and community resources to assist in personal and educational development.

GE: E
3 units

HS 015. Human Life Span

Emphasizes growth and development of the individual from conception to death - perspective on biological, cultural, sociological and psychological changes and continuities during the human life span. Special attention will be given to socioeconomic status, gender and ethnic variations.

GE: D1
3 units

HS 067. Introductory Health Statistics

A practical introduction to the statistical methods used in health, health care, biomedical, and public health settings. Concepts are illustrated with concrete examples that demonstrate how principles operate and are applied to common health problems.

Prerequisite: Satisfaction of ELM requirement.
GE: B4
3 units

UPPER DIVISION

HS 100W. Writing Workshop

See HPRF 100W.
ABC/No Credit
GE: Z
3 units

HS 101. Computer Applications for Professionals

See APSC 101.
3 units

HS 102. Health Team Building

Develops skills to work effectively on a health team. Learning to plan, implement and evaluate health programs; understanding the dynamic forces operating in groups; integrating and applying theory and practice.

Prerequisite: Upper division standing.
3 units

HS 104. Community Health Promotion

Examination of community health issues, needs and assets, core determinants, enabling factors, and levels of intervention. Introduction to community approaches to disease prevention and health promotion, risk and resilience, social capital, and social change to promote community health.

Pre/Corequisite: HS 1.
3 units

HS 105. Current Issues in Nutrition

See NUFS 105.
3 units

HS 107. Aging and Society

See GERO 107.
GE: S
3 units

HS 108. Health in Later Life

See GERO 108.

3 units

HS 111. Medical Ethics

See PHIL 111.

3 units

HS 117. Social Policy and Services in Aging

See GERO 117.

3 units

HS 118. Long Term Care Services

See GERO 118.

3 units

HS 122. Women in the Second Half of Life

See GERO 122.

3 units

HS 126. Drugs, Brain and Behavior

See PSYC 126.

3 units

HS 135. Health Issues in a Multicultural Society

See HPRF 135.

GE: S

3 units

HS 137. Families, Aging, and Diversity

See GERO 137.

3 units

HS 140. Human Sexuality

See ANTH 140.

GE: S

3 units

HS 145. Community Mental Health

Theories and knowledge of mental health factors influencing the well-being of individuals across the lifespan. Emphasis is on identifying and utilizing community resources to facilitate personal development and empowerment at all ages.

Prerequisite: HS 104 and upper division standing.
3 units

HS 158. Health Communications and Technology

Explores the evolving use of Internet technology in health care, disease prevention, and health promotion. The health professional's role as developer and use of online health resources is examined. The Internet's future role in health is assessed.

Prerequisite: Computer skills.
3 units

HS 159. Health Program Planning

Students will develop a community health plan that is based on an assessment of needs and community assets. The plan will include interventions that reflect "Best Practices" and recognize the value of partnerships, media advocacy and policy advocacy.

Prerequisite: HS 104.
Pre/Corequisite: HS 100W.
3 units

HS 161. Epidemiology

The study of population-based risks of infectious and noninfectious diseases and how these risks relate to cause, treatment and prevention.

Prerequisite: Upper division standing.
3 units

HS 162. Health Care Organization and Administration

Exploration of health economics, financing, insurance theory and contemporary trends in health care organization, management and administration.

Prerequisite: HPRF 100W.
3 units

HS 164. Health Services and Social Marketing

Introduction to marketing principles and concepts as applied in community health education and health services settings. Examination of difference between strategic business marketing and social marketing for health, through examples of successful health education and health services programs.

Prerequisite: HS 104.
3 units

HS 165. The Health Professional

Preparation for entry into community health professions with an emphasis in four areas; (1) settings and roles, (2) skills for practice, (3) ethics, and (4) leadership and professional associations.

Prerequisite: HS 104 and Final Semester.
3 units

HS 166A. Field Experience Seminar

Theory and practice in a community health agency, health care facility or industry.

Prerequisite: HS 162 and HS 165 (with grades of "C" or better) and senior standing.

Corequisite: HS 166B.
For majors only with instructor consent.
Credit / No Credit
3 units

HS 166B. Field Experience in Health Science

Supervised work experience in an official or voluntary health agency, health care facility or industrial setting: short-term projects, observation of agency or facility dynamics and individual skills development.

Prerequisite: HS 162 and HS 165 (with grades of "C" or better) and senior standing.

Corequisite: HS 166A.
For majors only with instructor consent.
Credit / No Credit
3 units

HS 167. Biostatistics

Statistical analysis of health and biological data covering measurement scales, random sampling, data quality, data storage descriptive and exploratory techniques, probability distributions, estimation and hypothesis testing, includes an integrated lab activity.

Prerequisite: HS 67
Lecture 2 hours/activity 2 hours
Repeatable for credit
3 units

HS 168. Health Education Theory and Methods

Explores the foundations and applications of health education theory. Students will study models of individual, interpersonal and community health behavior. They also will learn methods for applying theory in research and health education practice.

Prerequisite: HS 104.
3 units

HS 169. Diversity, Stress and Health

See KIN 169.

GE: S
3 units

HS 170. Health Care Economics

Study of the economics of health care and understanding cost-benefit, cost-effectiveness ratio and decision tree analysis for health care.

Prerequisite: HS 162
3 units

HS 171. Managed Health Care

Study of managed health care and its growth and impact on the organization and delivery of health services in the United States.

Prerequisite: HS 162.
3 units

HS 180. Individual Studies

Individual work on special topics by arrangement.

Prerequisite: Upper division standing, instructor consent and department chair approval.
Repeatable for credit
Credit / No Credit
1-4 units

HS 184. Directed Reading

Directed reading in journals and books of authorities in the field of health.

Prerequisite: Upper division standing and department chair consent.
Repeatable for credit
Credit / No Credit
1-4 units

GRADUATE

HS 200. Contemporary Practice in Public Health

Introduction to the philosophy, ethics, historical roots, and approaches of contemporary public health education and health promotion. Emphasis is on frameworks and strategies used in practice.

Repeatable for credit
2 units

HS 201. Groups and Training: Theory and Practice

Study of group processes and learning theories as they apply in the public health training environment. Apply experiential learning concepts and principles in the design, implementation, and evaluation of training programs.

2 units

HS 230. Long Term Care: Organization and Administration

See GERO 230.

3 units

HS 261. Principles of Epidemiology

Introduction to epidemiologic concepts and methods with applications to public health practice for students intending to engage in, collaborate in, or interpret the results of epidemiologic studies in the scientific appraisal of community health.

Prerequisite: HS 167 or equivalent.
3 units

HS 262. Health Services Organization

In-depth examination of the organization and administration of health services in the United States. Topics explored include health care economics, health service expenditures, insurance theory, comparative health systems, government role, cost containment and quality.

2 units

HS 263. Principles and Skills of Health Administration

Application of administrative concepts and skills in health systems agencies. Includes decision-making, communication, funding, budgeting, marketing, personnel management, labor relations, planning, evaluation and health promotion.

2 units

HS 264. Health Policy

Analysis of major policy issues with an emphasis on neoclassical economics. Topics to be explored include health insurance and its effect on utilization, antitrust, managed care, health care legislation and health care reform.

Prerequisite: HS 117 (or equivalent).

3 units

HS 265. Environmental Health

Investigation of environmental health issues: risk evaluation, risk management, hazardous materials, occupational health and safety, plus air, water and noise pollution. Learning fundamentals of managing environmental health problems.

Repeatable for credit

3 units

HS 267. Computational Public Health Statistics

Methods of public health and biostatistical data collection, management, analysis and reporting using microcomputers, including the detection and control of confounding factors.

Prerequisite: HS 167 or instructor consent.

3 units

HS 268. Advanced Program Evaluation

Advanced study of health program evaluation. Includes examination of key concepts, integrating qualitative and quantitative methods, selecting appropriate indicators of measuring success, and overcoming barriers evident in community settings.

Prerequisite: HS 272.

3 units

HS 270. Interpersonal Processes

Study of group processes and their effects on changes in health behavior within individuals and members of groups. Practice interpersonal skills in group problem solving, conflict resolution and management, communications and creative learning.

3 units

HS 271. Theoretical Bases of Health Behavior

Psychological, social, cultural and ethical factors in health-related behavior and behavior change.

3 units

HS 272. Health Promotion Planning and Evaluation

Theory and practice of developing community health programs. Focus on program planning within the context of strategic planning, problem/needs assessment, setting of program goals and objectives, approaches to program evaluation and grant writing.

Prerequisite: Conditional or classified graduate standing.

3 units

HS 273. Systems Approach to Community Health Problems and Program Design

General systems theory and its application to a selected community health problem. Systems analysis and the use of a variety of specific and broad systems tools within the context of program design. Structured opportunities to apply and practice specific methodologies.

Repeatable for credit

3 units

HS 274. Training

Students learn and apply theory and skills by participating in a training design process.

3 units

HS 276. Community Organization and Health Promotion

Advanced study of the principles, practices and ethical considerations underlying community organization, health promotion, empowerment and advocacy. Includes examination of the change process and introduction to the skills and tools of effective public health organizing.

3 units

HS 277. Multicultural Communication for Health Professionals

Theories and skills of multicultural communication necessary for effective professional practice with diverse clients, communities, staff and colleagues. Examination of concepts and indicators of cultural competence begins with intensive self-study and concludes with community examples.

3 units

HS 278. Organizational Behavior and Development in Health Care Settings

Organizational behavior, development and change in health care settings; the practice of organizational development technology skills.

Prerequisite: HS 270 or instructor consent.

3 units

HS 291. Practicum I: Professional Experience

Supervised work experience in community, health care organization or worksite setting; emphasis will be on individual responsibility in a program area and joint responsibility in several ongoing programs.

Credit / No Credit

6 units

HS 291A. Fieldwork Seminar

Guidance for fieldwork practicum. Emphasis on preparation including (1) self-analysis of strengths, competencies, and professional development plans; (2) developing professional fieldwork objectives; (3) site negotiation; and (4) reviewing key concepts from health education core courses.

Prerequisite: HS 200, HS 270, HS 271, HS 272.

Repeatable for credit

3 units

HS 291B. Fieldwork Practicum

Application of theory and skills to health education programs or research in a health care organization, community, or worksite setting under the direction of a health education mentor. 400 hours.

Prerequisite: HS 200, HS 270, HS 271, HS 272.

Corequisite: HS 291A.

Repeatable for credit

Credit / No Credit

1 unit

HS 291C. Fieldwork Synthesis

Critical reflection and synthesis of fieldwork experience including, lessons learned, organizational analysis, and professional self-assessment

1 unit

HS 292. Practicum II: Professional Experience

Supervised experience. Emphasis is on short term projects and observations related to practice.

Prerequisite: HS 291.

Credit / No Credit

3 units

HS 293. Public Health Leadership

Preparation for leadership in public health.

Emphasis is on: policy and politics of health advocacy, ethics in public health education, and final self-assessment of skills for practice and continuing education priorities.

Prerequisite: HS 291A and HS 291B or instructor consent.

Repeatable for credit

2 units

HS 295. Research Methodology

See HPRF 295.

3 units

HS 298. Graduate Project

Development and analysis of independent activity in the field of community health education, health administration or school health.

Prerequisite: Approved graduate project proposal and instructor consent.

More than one semester may be required to complete activity.

Repeatable for credit

Credit / No Credit

3 units

HS 299. Master's Thesis

Supervised original research in the field of community health education.

Prerequisite: Approved master's thesis proposal and instructor consent.

One to two semesters and 3 to 6 units required.

Repeatable for credit

Credit/No Credit/Report in Progress

3 units

History

College of Social Sciences

Dudley Moorhead Hall 134
408-924-5500
www2.sjsu.edu/depts/history

Professors

John Bernhardt
Michael Conniff
Robert D. Kumamoto
Mary Pickering
E. Bruce Reynolds
Jonathan P. Roth
George Vasquez, Associate Dean

Associate Professors

Patricia Lopes Don
Patricia Evridge Hill, Chair

Assistant Professors

Ruma Chopra
Glen Gendzel
Libra Hilde
Rajiv Khanna

Curricula

- BA, History
- BA, History, Social Science Single Subject Teacher Candidates
- 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

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 annual 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 Gender History, American History, Ancient-Medieval History, Modern European History and World History. Other specializations can be arranged. Graduate students pursue studies in two fields. 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, 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 insure 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 three letters of recommendation 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". 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.

BA – History, Social Science**Single Subject Teacher Candidates**

The History Department recommends that all majors who wish to pursue the Social Science Teaching Credential prepare for and pass the California Subject Examination for Teachers (CSET) in the Social Sciences. Passing the CSET will highly qualify the teacher, according to the provisions of the No Child Left Behind (NCLB) Act, to teach all four subjects of the social sciences – history, geography, economics, and civics. The department has prepared a recommended course list in the BA History for teachers preparing for the CSET examination. The department also conducts workshops to advise teachers how to prepare for the examination. Students interested in preparation for middle school teaching should see the Undergraduate Advisor.

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

HIST 015A and HIST 015B (6) or HIST 020A and HIST 020B (6)

Physical Education 2**Requirements in the Major** 42**Lower Division** 9

HIST 001A, HIST 001B and HIST 099

Upper Division 33

HIST 100W, HIST 102 (6); two pre-modern, HIST 155 (9); one western modern (3); HIST 189B (3); four United States, at least one pre-1900 (12)

Electives and/or Minor 31

The department strongly recommends a minor in Economics, Political Science or Geography and the following courses: ECON 109, POLS 120, GEOG 101, GEOG 140, SOCS 177, plus 3 units from R course list of SJSU Studies

Total Units Required 120

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

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**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 (6)

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 www.sjsu.edu/gradstudies.

Completing the Course Requirements

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 hours 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
<i>Professorial nomination is required.</i>	
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 M.A. 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 three 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, 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

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 hours. Additional courses are twelve semester hours 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, with a 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 Studies and Research website at www.sjsu.edu/gradstudies.

Courses

HISTORY

LOWER DIVISION

HIST 001A. World History to 1500

Introduces students to the world's regions and civilizations as interconnected entities. HIST 1A examines the growth and development of traditional civilizations to 1500. HIST 1B surveys the transformation of civilizations since 1500.

3 units

HIST 001B. World History from 1500

Introduces students to the world's regions and civilizations as interconnected entities. HIST 1A examines the growth and development of traditional civilizations to 1500. HIST 1B surveys the transformation of civilizations since 1500.

3 units

HIST 010A. Western Civilization

History and culture of Europe; social and political structures; roles of individuals and groups; relationships among ideas, institutions, society and culture; to 1648.

CAN HIST 2

GE: D2

3 units

HIST 010B. Western Civilization

History and culture of Europe; social and political structures; roles of individuals and groups; relationships among ideas, institutions, society and culture; 1648 to present.

CAN HIST 4

GE: D2

3 units

HIST 015A. U.S. History and Government

Treatment of essentials of U.S. history and politics. Satisfies the American Institutions requirements in history, government and ideals.

Note: Entire sequence satisfies GE Areas D2,3; F1,2,3.

GE: M6

3 units

HIST 015B. U.S. History and Government

Treatment of essentials of U.S. history and politics. Satisfies the American Institutions requirements in history, government and ideals.

Note: Entire sequence satisfies GE Areas D2,3; F1,2,3.

GE: M7

3 units

HIST 020A. History of the American People

Survey of continuity and change in society, culture, institutions and environment. Origins through slavery conflict..

Note: Entire sequence satisfies GE Area F1.

CAN HIST 8

3 units

HIST 020B. History of the American People

Survey of continuity and change in society, culture, institutions and environment. Emergence of modern society and world power status.

Note: Entire sequence satisfies GE Area F1.

CAN HIST10

3 units

HIST 050. Historical Process: Understanding Historical Reasoning

Modes and skills of practical logic and reasoning through study of historical method. Historical problems examined to that end.

GE: A3

3 units

HIST 099. History Fundamentals

An introduction to the skills, technology and technique of history reading, writing and research. It is a prerequisite to History 100W. Sophomores and transferring juniors are required to take this course.

Prerequisite: Open to history majors only; lower or upper division standing.

3 units

UPPER DIVISION

HIST 100W. History Writers' Workshop

Development of skills required for the art and practice of historical research and writing. Library research, oral reports and written exercises dealing with a variety of historical problems.

Prerequisite: ENGL 1B (with a grade of C or better); Completion of core GE, satisfaction of Writing Skills Test and upper division standing. History 99 required or Department permission.

ABC/No Credit

GE: Z

3 units

HIST 101. History Honors

Selected topics in history in more than one area or chronological period.

Prerequisite: History major or minor or social science major with overall GPA of 3.0 and a history GPA of 3.5.

3 units

HIST 102. Historiography

Critical study of the writings of great historians.

Prerequisite: HIST 100W.

3 units

HIST 103. Colloquium

Intensive reading, discussion and reports. Fields of emphasis in specialization of instructor (see schedule of classes).

Repeatable for credit

3 units

HIST 105A. History of Africa

Sub-Saharan Africa from Paleolithic times to the nineteenth century: Development of the Sudanic state and the pre-European empires of Africa.

3 units

HIST 105B. History of Africa

African history in the nineteenth and twentieth centuries, emphasizing the growth of African nationalism.

3 units

HIST 106. History of the Holy Land

This course covers the history of the land successively known as Canaan, Israel and Palestine--the Holy Land of the Jews, Christians and Moslems--from the Neolithic down to the present.

Prerequisite: Upper division standing

3 units

HIST 107. History of Southeast Asia

Southeast Asia from the eighteenth century to the present with emphasis on European colonization and the emergence of independent states in the region.

3 units

HIST 109A. History of China

Traditional society from earliest times to 1800.

3 units

HIST 109B. History of China

China's revolutions and ongoing modernization.

3 units

HIST 110A. History of Japan

From earliest times to 1750.

3 units

HIST 110B. History of Japan

Since 1750 emphasizing the process of modernization.

3 units

HIST 115. Ancient Near East

Great river civilizations (Nile, Tigris-Euphrates and Indus) from 3500 BC to the Roman Conquest, including the empires of the Hittites, Assyrians, Persians and the Hebrews. Emphasis on politics, culture, religion and contributions to Greek, Roman and Christian developments.

3 units

HIST 116. History of Greece

Ancient Near East and the Hellenic world from earliest times to the Roman conquest of Greece.

3 units

HIST 117. History of Rome

Romans from the founding of Rome to the end of the ancient world.

3 units

HIST 118. Byzantine World to 1453

The political, social, economic and cultural history of the Byzantine Empire from the fourth to the fifteenth centuries.

3 units

HIST 119. History of Christianity to the Reformation

An historical survey of the institutional church and of Christian theology and spirituality from its Jewish backgrounds through the Roman Empire and the Middle Ages to the Reformation.

3 units

HIST 121A. The Medieval World (300-1500)

From 300 - 1000 emphasizing decline of the Roman Empire, growth of feudalism, Carolingian Empire.

3 units

HIST 121B. The Medieval World (1000-1500)

From 1000 - 1500 emphasizing growth of papal power, commercial revolution, twelfth century Renaissance and decline of medieval civilization.

3 units

HIST 122. The Renaissance and Reformation

The European world in transition from 1400-1600.

3 units

HIST 123. Historic Preservation and Neighborhood Revival

See URBP 123.

Repeatable for credit

3 units

HIST 124. Early Modern Europe

The European world in transition from 1580 to 1750. A continuation of History 122, exploring the central place of the princely court in the transformation of politics, religion, art, culture, science, technology, and philosophy. Introduction to the Enlightenment.

3 units

HIST 130A. Military History

Principles and problems of strategy, tactics and civil-military relationships. To the end of the Franco-Prussian War (1871).

3 units

HIST 130B. Military History

Principles and problems of strategy, tactics and civil-military relationships. From 1871 to the present.

3 units

HIST 132. World War II

Causes, conduct and consequences of the Second World War (1939-1945): Military tactics, national strategy, ideologies, leaders and organization for total war.

3 units

HIST 134. History of the Vietnam War

Military and diplomatic aspects of American involvement in Vietnam, 1945-1975. History and present status of the peoples of Indochina and the domestic impact of the War upon American politics, society and culture.

3 units

HIST 136. History of Terrorism in the Modern World

A study of the historical origins of modern terrorism-both domestic and international. Includes an examination of terrorist typologies and demographics, as well as the economic, social, psychological, and political consequences of terrorism.

3 units

HIST 137. California in Historical and Social Scientific Perspectives

See SOCS 137.

3 units

HIST 138. United States in Historical and Social Science Perspectives

See SOCS 138.

GE: S

3 units

HIST 139. The World in Historical and Social Science Perspectives

See SOCS 139.

Repeatable for credit

GE: V

3 units

HIST 142. History of Science, Medicine and Technology in the Modern World

Survey of major developments in science, medicine, and technology since 1500. Focus on their impacts on thought, politics, economies, and societies.

3 units

HIST 143. Europe, 1750-1900

Major political, economic, social, and cultural themes of European history from the Enlightenment to 1900.

3 units

HIST 144. Europe, 1900-1945

A history of political, economic, social, and cultural developments in Europe during the era of the two world wars.

3 units

HIST 145. Europe and the World Since 1945

Political, economic and social developments since World War II, with emphasis on Europe.

3 units

HIST 146. National Histories

The origins, rise and modern development of selected world nations: Germany, France, India and others, studied individually and in rotation.

Repeatable for credit when topic changes.

Repeatable for credit

3 units

HIST 149. History of Music

A lecture course designed to introduce students to the way in which "sound" has influenced and reflected the lives of humans throughout history.

Prerequisite: Upper division standing or instructor consent.

3 units

HIST 151A. History of Britain

Ancient-Medieval Britain from the earliest times to the end of the fourteenth century.

3 units

HIST 151B. History of Britain

Early Modern Britain from the fifteenth to the eighteenth centuries.

3 units

HIST 151C. History of Britain

Modern Britain from the eighteenth century to the present.

3 units

HIST 151D. Women in the British Empire

Course will examine women in Britain and in areas that it dominated from the eighteenth to twentieth centuries. These areas include India, South Africa, Nigeria, Egypt, Iraq, Palestine, Hong Kong, and the Caribbean Islands (Bermuda and Jamaica).

Prerequisite: Upper division standing.

3 units

HIST 152. The History of the City

The origin and development of the city in its several modes within traditional societies.

Offered only once every three years.

3 units

HIST 153. History of Women in Europe

Changes in women's private and public roles in diverse national, class, religious, ethnic, and racial contexts from Ancient Greece to Modern Europe.

Prerequisite: Complete of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: V

3 units

HIST 154. History of the Jews

The Jews from their origins in the ancient Near East, through their diaspora to every part of the world, to the present. Jewish life and thought within the framework of individual regions, as well as of global history.

Cross-listed with Jewish studies.

3 units

HIST 155. 20th Century World

Global perspectives on a century of scientific progress that also saw the violent deaths of millions, with emphasis on the decline of traditional imperialism and the ideological contention that led to World War II and the Cold War.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing.

For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: V

3 units

HIST 158. Gender and Consumer Culture

Investigates men's and women's relationship to goods and the development of a consumer society in America. Drawing on economic, business, social and cultural history, examines trade, shopping and consumer politics; colonial times to the present.

Prerequisite: Upper division standing
3 units

HIST 159. Gender and Medicine

Roles and experiences of American women as both patients and practitioners of western medicine. The medical invention of sex and gender, gendered medical definitions and experiences of bodily functions, disease and suffering, women as healers and health care professionals.

Prerequisite: Upper division standing
3 units

HIST 162. Colonial Latin American History

Survey of Latin America from pre-Columbian times to nineteenth century independence, emphasizing the invention, establishment and reform of institutions; the role of missionary religion and intellectual tradition; and issues of race, class and gender.

3 units

HIST 163. Nineteenth Century Latin American History

Latin American history from the Bourbon reforms after 1780 to the Mexican Revolution of 1910, treating politics, government, economics, religion, art and literature, race, class, gender and relations with the United States.

3 units

HIST 164. Latin America in the Twentieth Century

Latin American history since the Mexican Revolution of 1910, with emphasis on revolution, military rule, religion, economics, race, gender and inter-American relations.

3 units

HIST 165. History of Brazil

Brazilian history and civilization from the Portuguese discovery to the present day.

Prerequisite: Upper division standing.
Repeatable for credit
3 units

HIST 166. Contemporary Mexico

History of Mexico from 1910 to the present, with emphasis on the political, social and economic impact of the first major revolution of the twentieth century and the rise and decline of the ruling PRI.

3 units

HIST 167. Intellectual History of Latin America

Intellectual development of Latin America since 1492: Impact of European intellectual currents and development of indigenous philosophies in the twentieth century.

3 units

HIST 170. Topics in American History

An investigation in depth of selected periods or problems. May be repeated for credit for different topics.

Prerequisite: Upper division standing.
Satisfies American Institutions requirement in history.
No credit for history majors or minors.
Repeatable for credit
3 units

HIST 171. American Constitutional and Legal History

Origins and evolution of the United States Constitution and federal system from the American Revolution to the present.

Prerequisite: Upper division standing.
Satisfies American Institutions requirements in American and California government.
3 units

HIST 172A. History of American Foreign Relations to 1913

The United States' foreign relations, from the American Revolution to 1913.

3 units

HIST 172B. History of American Foreign Relations from 1913

The United States' foreign relations, since 1913.

3 units

HIST 173. Colonial America

Examines the communities of colonial North America, focusing on interactions between people of different racial and cultural groups, the emergence of chattel slavery, witchcraft accusations, changes in family and economic life, and the connections between America and the Atlantic world.

Prerequisite: Upper division standing or instructor consent.

Offered only occasionally.

3 units

HIST 174. Revolutionary America

Tracing the politics and strategy of the war for independence and economic, political, and social transformations of the Revolutionary era, this course examines the efforts of Native Americans, slaves, artisans, housewives, and planters to shape the war and its aftermath.

3 units

HIST 175. Inventing America, 1800-1860

The history of the United States from 1800-1860. Topics include the rise of democratic political culture, industrialization, the emergence of a market economy, pivotal changes in institutions such as the family and church, and the redefinition of key American values.

3 units

HIST 176. Civil War America

Course takes a topical approach, examining the political, social, economic, military, and ideological dimensions of the American Civil War to assess its transformative impact on individuals, groups, institutions, the role of government, and the nation as a whole. May be repeated for credit for different topics.

Prerequisite: Upper division standing or instructor consent.

Repeatable for credit

3 units

HIST 177. The U.S. in the Industrial Age, 1865-1920

Economic, social and political history from the end of the Civil War to the achievement of women's suffrage. Topics include the triumph of industrial capitalism, labor conflict, women's suffrage, Populism/Progressivism, race/ethnicity and World War I.

3 units

HIST 178. Crash, Depression and War, 1920-1950

America from the "Roaring" 1920s, through the Great Depression, into World War II, postwar prosperity, and the beginnings of the Cold War era.

3 units

HIST 179. Cold War America and Beyond, 1950 – Present

Modern American history, emphasizing topics such as the transition to peacetime, McCarthyism, the Civil Rights movement, and the domestic impact of the Vietnam War.

3 units

HIST 180. Individual Studies

Individual work on special topics by arrangement.

Prerequisite: History majors or minors.

Repeatable for credit

Credit / No Credit

1-4 units

HIST 180H. Senior Honors Thesis Seminar

Topic arranged with the instructor.

Prerequisite: Enrollment in honors program.

Repeatable for credit

3 units

HIST 181. The Sixties: A Political and Cultural History

Explores political and cultural issues of the 1960s from Kennedy to Nixon; engagement in Vietnam to withdrawal; complacency to consumerism and women's liberation; the Free Speech movement to Woodstock; and sit-ins to urban riots.

3 units

HIST 182. Business Industry and Technology in America

Historical survey of business from commerce in a predominantly agricultural society through the evolution of corporate structures in the modern industrial state, with emphasis on the impact of technology.

Prerequisite: Upper division standing or instructor consent.

3 units

HIST 183. The American West

History of the North American West from 1492 to the present. Native American civilizations; European contact, trade, and colonization; American expansion, conquest, and development. Emphasis on race, class, economics, politics, society, environment, and culture.

3 units

HIST 184. Directed Reading

Directed reading on a specific topic in history.

Prerequisite: History major/minor and instructor and department chair consent.

Repeatable for credit

Credit / No Credit

1-4 units

HIST 186. Ethnicity and Race in United States History

Formulation of multiethnic society in the United States. Comparison of immigration with experiences of slaves and Native Americans. Ethnic incorporation contrasted with racism and domination. Significance of gender, class and ideology.

3 units

HIST 187. United States Social History

Aspects of social history under various topics such as urbanization, class stratification, labor, sports, family and community life and others. May be repeated for credit for different topics.

Repeatable for credit

3 units

HIST 188. History of Women in the United States

A multi-faceted history of women in the United States from colonial times to the present.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

Repeatable for credit

GE: S

3 units

HIST 189A. California History

Social, political and economic history from the Spanish discovery to the present; to 1900.

Prerequisite: Upper division standing.

Satisfies American Institutions requirement in California government.

3 units

HIST 189B. California History

Social, political and economic history from the Spanish discovery to the present; Since 1900.

Prerequisite: Upper division standing.

Satisfies American Institutions requirement in California government.

3 units

HIST 194. Colloquium in African Studies

See AFRS 194.

Repeatable for credit

3 units

HIST 197. Introduction to Public History

Introduction to preservation and presentation of history to the community and to roles historians play in public agencies. Exploration of archives, museums, and historic sites. Required for admission to Public History internship.

Prerequisite: Upper division standing.

3 units

HIST 199. Public History Internship

Supervised placement in historical organizations, public institutions and community agencies concerned with preservation of history. May be repeated for 6 unit maximum.

Prerequisite: Instructor consent.

Repeatable for credit

Credit / No Credit

3 units

GRADUATE**HIST 200. Graduate Methodology, Research and Writing**

An orientation to history graduate study focusing on the critical advanced writing, library, research and historiographical skills needed for success as a graduate student and professional historian. Includes an overview of current methodologies and trends in the field.

3 units

HIST 205. Topics in History

Supervised readings, discussions and reports in areas unavailable in other departmental offerings.

Prerequisite: Instructor consent and approval by graduate advisor.

Repeatable for credit

3 units

HIST 209. Colloquium in Ancient and Medieval Europe

Intensive readings, discussions and reports on Ancient and Medieval Europe. For areas and field of emphasis see the schedule of classes. May be repeated when content changes.

Repeatable for credit

3 units

HIST 210. Advanced Colloquium United States History

Intensive readings, discussions, and reports on American history in one of three areas: 1492 to 1780, nineteenth century, or twentieth century. May be repeated with different instructor or topic.

Repeatable for credit

3 units

HIST 211. Advanced Colloquium in Modern European History, Since 1900

Intensive readings, discussions, and reports. Topics have included the French Revolution, the Holocaust in Europe, and issues of marginalization of gender and class during the early modern period. May be repeated with different instructor or topic.

Repeatable for credit

3 units

HIST 220. Advance Colloquium in World History

Intensive readings, discussions, and reports in Asian, African, European, and North and South American history, one of three areas: ancient and classical eras (before 1000), between 1000 and 1750, or since 1750. May be repeated with different instructor or topic.

Repeatable for credit

3 units

HIST 221. Seminar in World History

An intensive study of some area, problem, or period in world history. Topics have included World War II, the Atlantic Economy, World Slavery, British Imperialism. Repeatable when course content changes.

Repeatable for credit

3 units

HIST 230. Seminar In Ancient and Medieval Europe

An intensive study of some areas, problem or period in Ancient or Medieval Europe. Individual research with oral and written reports. May be repeated with different instructor or topic.

Prerequisite: Instructor consent.

Repeatable for credit

3 units

HIST 240. Seminar in Pre-Twentieth Century Europe

An intensive study of some area, problem or period in European history before 1900. Topics have included economic, social, and gender differences in Industrial Europe and social theories of Max Weber. May be repeated when content changes.

Prerequisite: Instructor consent.

Repeatable for credit

3 units

HIST 241. Seminar in Twentieth Century Europe

An intensive study of some area or problem. Individual research with oral and written reports. Topics have included the Cold War, European diplomacy, and international security.

Prerequisite: Instructor consent.

Repeatable for credit

3 units

HIST 272. Seminar in American Diplomatic History

An intensive analysis of some chronological period, area or major problem in American diplomatic history. Individual research with oral and written reports.

Prerequisite: Instructor consent.

Repeatable for credit

3 units

HIST 274. Seminar in American Social and Intellectual History

An intensive study of some phase of American social and intellectual history. Individual research with oral and written reports. Topics have included the economic, social and gender differences in American history. May be repeated when content changes.

Prerequisite: Instructor consent.

Repeatable for credit

3 units

HIST 276. Seminar in Early American History

An intensive study of some phase in, or problem of, American history from colonial period through the Civil War. Topics have included American independence from British control, the development of the industrial North, and the colonization of the West. May be repeated when content changes.

Prerequisite: Instructor consent..

Repeatable for credit

3 units

HIST 280. Seminar in Recent American History

An intensive study of some phase or problem in the period from the Civil War to the present. Individual research with oral and written reports. May be repeated when content changes.

Prerequisite: Instructor consent.

Repeatable for credit

3 units

HIST 283. Seminar in California and Western History

An intensive study of an area, phase, or period of history associated with California or the West. Individual research with oral and written reports. May be repeated for credit when course content changes.

Prerequisite: Instructor consent.

Repeatable for credit

3 units

HIST 288. Seminar in the History of Women in the United States

An intensive study of some phase of the history of women in the United States. Individual research with oral and written reports.

Prerequisite: Instructor consent.

Repeatable for credit

3 units

HIST 298. Special Study

Advanced individual research.

Prerequisite: Instructor consent and approval by graduate advisor.

More than 3 units only in areas where graduate courses not normally offered.

Repeatable for credit

Credit / No Credit

1-6 units

HIST 299. Master's Thesis or Project

Open only to approved master's candidates in history. Reserved for students under Plan A.

Repeatable for credit

Credit/No Credit/Report in Progress

3-6 units

Hospitality, Recreation, and Tourism Management

College of Applied Sciences
and Arts

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408-924-3061 (Fax)
www.sjsu.edu/hrtm/

Professors

Colin Johnson
Kate Sullivan
Randy Virden, Chair

Associate Professors

Gonzaga da Gama
Tsu-Hong Yen

Assistant Professors

Ranjan Bandyopadhyay
Jocelina Santos
Kim Uhlik

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

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.

BS – Hospitality, Tourism and Event Management

Approved for implementation in the Fall of 2008, this is an innovative, interdisciplinary program which includes core coursework in the department and supporting coursework from SJSU's business and nutrition programs. Elective coursework 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.

BS – Recreation

This degree program, founded in 1947, has a core accredited by the National Recreation and Park Association. All undergraduates complete this 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 recreation agencies/parks; college unions and student/campus activity centers; non-profit/volunteer agencies; armed forces; hospitals, rehabilitation centers, nursing facilities, schools; commercial, resort, camp and outdoor education recreation programs; theme parks and tourism enterprises; corporate training; and event planning/management.

MS – Recreation

Graduate students complete a common set of core courses and can then choose to complete a concentration in International Tourism or 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

The minor 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	11
BUS 020N, BUS 130, NUFS 020 and HRTM 100W	
Requirements in the Major	59
Core Courses	32
HRTM 001, HRTM 011 and HRTM 023 (9); HRTM 097A or HRTM 097B (3), HRTM 102, HRTM 105, HRTM 107, HRTM 134 and HRTM 156 (15) and HRTM 191A and HRTM 191B (5)	
Electives	27
Select in consultation with academic advisor	
Total Units Required	120

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	39
HRTM 090; HRTM 097A or HRTM 097B; HRTM 109, HRTM 110, HRTM 112, HRTM 113, HRTM 134, HRTM 135, HRTM 136, HRTM 160; HRTM 170A, HRTM 170B or HRTM 170C	
Electives	28
Advisor approved Minor (15-18) and electives (10-13); or electives (28) (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	35
HRTM 090 (3); HRTM 097A or HRTM 097B (3); HRTM 109, HRTM 110, HRTM 112, HRTM 113, HRTM 134, HRTM 135, HRTM 136, HRTM 160 and HRTM 170A (25); HRTM 170B or HRTM 170C (4)	
Recreation Management	29
HRTM 105, HRTM 106, HRTM 107, HRTM 108 and HRTM 175 (15); 14 units of electives in consultation with academic advisor (14)	
Total Units Required	120

BS – Recreation, Concentration in Therapeutic 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	16
HRTM 100W, PSYC 001, PSYC 110, BIOL 065 and HS 015	
Requirements in the Major	54
Core Courses	35
HRTM 090 (3); HRTM 097A or HRTM 097B (3); HRTM 109, HRTM 110, HRTM 112, HRTM 113, HRTM 134, HRTM 135, HRTM 136, HRTM 160 and HRTM 170A (25); HRTM 170B or HRTM 170C (4)	
Therapeutic Recreation	19
HRTM 185, 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

MS – Recreation

Graduate Program Advisor:
Dr. Gonzaga da Gama

General Requirements for Admission

Applicants to the graduate program must complete all sections of the CSU online application at 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.

Requirements for Admission to Candidacy

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 Studies and Research website at www.sjsu.edu/gradstudies.

MS – Recreation

	Semester Units
Core Courses	6
HRTM 200 and HRTM 202	
Electives	18
Selected in consultation with graduate advisor.	
Culminating Experience	6
HRTM 298 and HRTM 204; HRTM 299	
Total Units Required	30

MS – Recreation, Concentration in International Tourism

	Semester Units
Core Courses	6
HRTM 200 and HRTM 202	
Required Courses	9
HRTM 215, HRTM 216 and HRTM 218	
Electives	9
Selected in consultation with graduate advisor.	
Culminating Experience	6
HRTM 298 and HRTM 204; HRTM 299	
Total Units Required	30

Courses

HOSPITALITY, RECREATION, AND TOURISM MANAGEMENT

LOWER DIVISION

HRTM 001. Introduction to Hospitality Management

Overview of structure and financial performances of hospitality industry; food and lodging, resorts, tourism enterprises, attractions and related operations. Focus on orientation to customer service, cultural/economic trends and career opportunities.

3 units

HRTM 010. Creating a Meaningful Life

Study how a meaningful life relates to the freedom to pursue happiness. Examines personal, social, and cultural bases for a creative and successful lifestyle. Learn to recognize and foster creative potential for lifelong personal growth, meaningful rewards, and leisure enjoyment.

GE: E

3 units

HRTM 011. Principles of Food and Beverage Operations

Overview of food and beverage with emphasis on food quality.

3 units

HRTM 012. Food, Beverage and Labor Cost Control Systems

Food, beverage and payroll systems, including standards determination; variable, semi-variable and fixed costs; the operating budget; income and cost control and menu pricing. Cost control simulation exercises implemented through software programs.

3 units

HRTM 015. Human Life Span

See HS 015.

GE: D1

3 units

HRTM 020. Sanitation and Environmental Issues in the Hospitality Industry

See NUFS 020.

2 units

HRTM 022. Catering and Beverage Management

See NUFS 022.

2 units

HRTM 023. Culinary Concepts

Food and beverage production techniques; preparation of food and beverage with emphasis on quality standards.

Lecture 1 hour/Lab 6 hours.

3 units

HRTM 090. Foundations of Leisure and Recreation

Field of parks and recreation; history of development of the recreation profession; survey of recreation and leisure services.

CAN REC 2

3 units

HRTM 094. Dynamics of Outdoor Recreation

The complex interaction of social, economic and biological factors involved in recreational use of natural resources, public forests, parks and refuges. Principles of administering outdoor recreation resources, public and private.

3 units

HRTM 097A. Event Planning

Principles of event planning with emphasis on development and integration of operational strategies in recreation and hospitality management. Application of programming techniques and exploration of career opportunities in event management.

Lecture 2 hours/activity 3 hours.

3 units

HRTM 097B. Special Events Management in Hospitality Recreation and Tourism

This course provides students with hands-on experience in the operation, coordination, and management of special events as they relate to hospitality recreation and tourism. Students will develop management skills and experience in the planning and execution of a major event.

Prerequisite: Instructor consent

3 units

UPPER DIVISION

HRTM 100W. Writing Workshop

Developing and enhancing written communication skills in the hospitality, recreation and tourism professions in the following areas: scientific/technical writing, administrative writing, public-relations-related writing and funding proposals.

Prerequisites: ENGL 1B (with a grade of C or better); Completion of core GE, satisfaction of Writing Skills Test and upper division standing.: ABC/No Credit

GE: Z

3 units

HRTM 101. Multicultural, Community and Global Issues

Multicultural/international issues in the hospitality industry; historical, socioeconomic, cultural and linguistic variables presented in relationship to these issues.

Prerequisite: Upper division status

3 units

HRTM 102. Fundamentals of Hotel Operations

Principles of organization, management and decision models applied to the tasks and challenges of hotel operations. Involves techniques of problem solving (including planning, organizing, staffing, directing and controlling operations) in areas of front office operations, housekeeping, food/beverage and personnel.

Prerequisite: Upper division standing.

3 units

HRTM 103. Facilities Management

Introduction to building layout and design combining both customer comfort and fundamental knowledge of engineered systems. Emphasis not on how to engineer properties but on how to plan for their maintenance, keeping in mind customer safety and satisfaction.

Prerequisite: Upper division status

3 units

HRTM 104. Marketing Research in Hospitality Management

Advances the philosophy that marketing is a way of doing business that is focused on the customer. Application of marketing concepts and research techniques to simulate hospitality managers' balance of organizational objectives and resources against varying customer needs and opportunities in the global marketplace.

Prerequisite: Upper division status.

3 units

HRTM 105. Managerial Accounting in Hospitality Recreation and Tourism

Examines accounting functions to support management analysis, planning and control. Special attention on internal controls; cost-volume profit relationships; relevant costs for special decisions (incremental costs, opportunity costs, etc.); flexible budgets; profit centers; responsibility accounting; and tax implications of decisions.

Prerequisite: BUS 20N, upper division status

3 units

HRTM 106. Strategic Management in Hospitality Recreation and Tourism

Systematically designing and evaluating empirical research for purposes of developing management strategies in the hospitality industry.

Prerequisite: Upper division status.

3 units

HRTM 107. Law and Ethics in Hospitality Recreation and Tourism

Government regulation of the hospitality, recreation, and tourism industries. Rights, obligations and liabilities of hotels, motels, restaurants, transportation services, recreation and travel/tourism agencies. Responsibilities for facilities and equipment common in the industry.

Prerequisite: Upper division status.

3 units

HRTM 108. Information Technology in Hospitality Recreation and Tourism

Focuses on the application of various information systems to the management of facilities, programs, services, finances and accounting, products, marketing and sales, human resources and other major functions of hospitality, recreation, and tourism organizations/agencies.

Prerequisite: Upper division standing

3 units

HRTM 109. Ecology, Culture and Responsible Recreation

History, ethics, environmental and social science and applied research methods to achieve competence in resource utilization for recreational and touristic purposes.

Prerequisite: Upper division status.

3 units

HRTM 110. Leisure and Human Development

Individual variations in play/recreation behavior-based on socioeconomic, cultural, developmental and psychological patterns. Exploration and application of the interrelationship of the community support systems and the delivery of leisure services.

Prerequisite: Upper division standing.

3 units

HRTM 111. Leisure, Culture, and Identity

Perspectives of leisure as a source of self-expression and social control related to cultural beliefs, values, and practices and institutionalized social systems. Observation, analysis and critique of history and social structures, leisure and culture, and personal opportunities for change.

Prerequisite: Completion of core GE, successful completion of Writing Skills Test, upper division standing.

GE: S
3 units

HRTM 112. Introduction to Therapeutic Recreation Service

Introduction to therapeutic recreation to increase awareness and knowledge of the characteristics of various illnesses and disabling conditions and their impact upon leisure functioning. Programming, leadership techniques, mainstreaming, integration and advocacy.

Prerequisite: Upper division standing.
3 units

HRTM 113. Leisure: Philosophy and Education

Examination of philosophical, historical, psychological, and wellness foundations for education for leisure. Learning systems to facilitate the process of change through leisure opportunities for wellness.

Prerequisite: Upper division standing.
3 units

HRTM 133. Principles of Recreation Leadership

In-service training workshops to develop skills in planning, implementation and evaluation processes. Self-awareness, communication and group process.

Prerequisite: Upper division standing.
4 units

HRTM 134. Human Resource Management in Hospitality Recreation and Tourism

Explores HR functions in business settings with a focus on development of knowledge and skills needed by managers. Supervisor's role within organizations with emphasis on recruitment, selection, staff training and development, legal issues, performance appraisal, motivational strategies, public relations, and maintenance of effective environments.

Prerequisite: Upper division status.
3 units

HRTM 135. Management of Facilities and Areas

Content includes legal principles and risk management, as well as fundamentals of facility design and preventive maintenance in reaction, park, and tourism settings. This is a problem-based learning course, including case study, problem solving, project applications, and working with stakeholders.

Prerequisite: Upper division status.
3 units

HRTM 136. Principles of Leadership in Recreation and Park Administration

In the context of leadership roles and responsibilities in the field of recreation and park administration, this course examines issues related to the organization and administration of human resources, finances, areas and facilities, programs, risk management, and liability.

Prerequisite: Upper division status.
3 units

HRTM 140. Conference and Convention Management

Leisure service system planning through explanation of the scope and segmentation of the conference, convention and event market. Strategies in planning, developing and implementing meeting and convention services.

Prerequisite: Upper division status.
3 units

HRTM 141. Resort and Club Management

Management and operation of resort and private club properties from their historical development to their economic and environmental impact; marketing and managing of services provided by these facilities within the leisure industry.

Prerequisite: Upper division standing.
3 units

HRTM 147. Service Operations Management

See BUS 147.

3 units

HRTM 148. Wine Appreciation

Introduces the student to the significance of wine in the dining experience. The class will study the wine-making process, wine grape varieties, health and legal issues of wine and include in-class evaluation of wine.

Prerequisite: Upper division standing.
3 units

HRTM 150. Principles of Commercial Recreation

Basic knowledge and understanding of the scope, philosophy, principles and practices of planning, managing and operating commercial recreation and leisure enterprises systems.

Prerequisite: Upper division standing.
3 units

HRTM 151. Planning and Development of Tourism and Event Enterprises

Practices utilized in private profit, nonprofit and commercial sectors for planning, developing and operating leisure, tourism, and event enterprises. Management functions and consumer behavior related to products and services.

Prerequisite: Upper division standing.
3 units

HRTM 156. Principles of Sustainable Travel and Tourism

Examination of travel and tourism as it relates to tourist motivations, hospitality and destination management. The impact of tourism on the physical, cultural and economic environment.

Prerequisite: Upper division standing.
3 units

HRTM 160. Research Methods in Recreation

Methods applicable to recreation problem-solving, leading to the completion of an individual research project. Exposure to computer-assisted applications regarding retention, retrieval and analysis of research-generated data.

Prerequisite: Upper division standing.
3 units

HRTM 165. Recreation Seminar

Discussions and evaluations of recreation issues in light of field experiences in HRTM 170.

Prerequisite: Upper division status.
3 units

HRTM 170A. Recreation Practicum

Supervised 100 hour internship in one of a variety of approved agencies (e.g. Leisure service management, therapeutic, resource management and private/commercial recreation).

Prerequisite: HRTM 90, department consent.
Credit / No Credit
1 unit

HRTM 170B. Internship in Recreation

Supervised 40-hour per week internship (minimum of 10 weeks) in one of a variety of approved agencies (e.g. Leisure service management, therapeutic, resource management and private/commercial recreation).

Prerequisites: HRTM 170A, upper division standing and instructor consent.
Credit / No Credit
4 units

HRTM 170C. Internship in Therapeutic Recreation

Supervised 40-hour per week internship program (minimum of 12 weeks) in one of a variety of approved health agencies (e.g. hospital, rehabilitation clinic).

Prerequisite: HRTM 170A, upper division standing and department consent.
Credit / No Credit
4 units

HRTM 175. Entrepreneurship in Hospitality Recreation and Tourism

Explores the entrepreneurial opportunities available in the public, non-profit, and private sectors by examining the process of creating, planning, and managing hospitality, recreation, and tourism ventures, programs, and services.

Prerequisite: Upper division status.
3 units

HRTM 180. Individual Studies

Individual work investigating special topics/problems through research, applied projects, and/or field experiences. Assessment by project(s) and/or paper(s).

Prerequisites: Upper division standing, supervising instructor approval, and department chair consent.
Repeatable for credit
Credit / No Credit
1-4 units

HRTM 184. Directed Reading

Directed reading in journals and books by authorities in Hospitality, Recreation, Tourism and related fields. Assessment by project(s) and/or paper(s).

Prerequisite: Upper division standing, supervising instructor approval, and department chair consent.
Repeatable for credit
Credit / No Credit
1-4 units

HRTM 185. Leisure, Recreation and Aging

Theory and practice related to the role of leisure services in maximizing the quality of life for older adults. Interrelationship of leisure and other supportive services for older adults in community and institutional settings.

Prerequisite: Upper division standing.
3 units

HRTM 191A. Internship Level 1

Supervised professional broad-based work experience in hospitality management industry for a total of 200 hour

Prerequisite: HRTM 1
Repeatable for credit
Credit / No Credit
1-4 units

HRTM 191B. Internship Level 2

Supervised professional in-depth work experience in hospitality management industry for total of 300 hours.

Prerequisite: HRTM 191A, upper division status.
Repeatable for credit
Credit / No Credit
3 units

HRTM 195. Leisure Wellness

A self-awareness process focused toward development of leisure wellness techniques and goals. An examination of historical, psychological and philosophical wellness foundations in leisure education.

Prerequisite: Upper division status.
3 units

HRTM 197. Facilitation Processes in Therapeutic Recreation

Study and application of concepts and facilitation processes of leisure education within therapeutic recreation settings. Includes instructional, leadership, counseling and behavioral change processes utilized within clinical and community settings.

Prerequisite: Upper division status, HRTM 112 and HRTM 113.
Lecture 2 hours/activity 2 hours.
3 units

HRTM 198. Therapeutic Recreation Procedures

Basic clinical procedures utilized in therapeutic recreation whereby habilitation/rehabilitation is the primary goal; client assessment, development of behavioral objectives and treatment plans, program evaluation, documentation and charting procedures.

Prerequisite: Upper division status, HRTM 197.
3 units

GRADUATE

HRTM 200. Contemporary Theories of Recreation and Tourism

Historical and cultural interpretations of recreation and tourism opportunities. Theories of recreation and tourism in the psycho-social framework of everyday life.

3 units

HRTM 202. Research Methods in Recreation and Tourism

A study of the various techniques and methods used in research; a survey of research studies in recreation, tourism and related fields.

Prerequisite: STAT 95 or instructor consent.
3 units

HRTM 203. Seminar in Recreation-Park Administration

A discussion of selected problems and their possible solutions dealing with personnel administration, planning of recreation and park areas and facilities, program organization, public relations, financial procedure, legal aspects of recreation, etc.

3 units

HRTM 204. Evaluating Recreation and Tourism Services

Application of concepts and skills in planning, design and evaluation to selected interest areas related to recreation and tourism services. Through use of analytical tools and processes, students prepare and defend an original evaluation project of a service program.

Prerequisite: HRTM 200.
3 units

HRTM 205. Finance in Recreation

Examination of bases, sources and strategies for financing and marketing of recreation programs and services. Includes public, private-for-profit, nonprofit and commercial leisure service agencies.

3 units

HRTM 210. Seminar in Leisure Research

Review, interpretation and evaluation of contemporary research in recreation, leisure, tourism, and related fields.

3 units

HRTM 211. Therapeutic Recreation Practices

Development and analysis of individualized program plans based upon selected theoretical foundations; emphasis on assessment, program design, follow-up services. Major service delivery systems studied in depth with regard to implications for leisure service delivery affecting disabled or ill individuals.

3 units

HRTM 212. Facilitation and Intervention in Therapeutic Recreation

Theories of intervention and facilitation integrated with methodology to recognize the interdependence of the individual and the environment. Direct and enabling technique application to the therapeutic recreation profession analyzed for situational effectiveness.

3 units

HRTM 213. Advanced Professional Therapeutic Recreation Practices

Professional practices, including in-service and pre-service training, consultation and group facilitation; processes for addressing professional trends and issues, including credentialing, legislative processes, interdisciplinary service delivery and networking.

Prerequisite: HRTM 211 and HRTM 212.

3 units

HRTM 215. International Tourism Trends and Issues

Analyze international tourism concepts, trends, and issues associated with development. Study goals and procedures for basic and applied tourism research and introduce varied information sources for independent research. Adopt a culturally sensitive perspective for interpreting information related to different cultures.

3 units

HRTM 216. Marketing for Tourism and Recreation

Study of characteristics which define cultural groups around the world. Learn to adjust marketing approaches, materials, and technology to accommodate the different ways people communicate to attract specific markets. Includes field-based market research.

3 units

HRTM 217. Information Technology and Tourism

Analysis of concepts, trends, and issues associated with technology and tourism development. History and applications of various information technologies in tourism businesses. Trends in technology and the impact on the travel industry.

3 units

HRTM 218. Tourism Planning and Development

Review, analysis, and application of concepts, strategies, techniques, and approaches associated with destination tourism planning, development, and management. Emphasis is on integrated and sustainable tourism planning and development models at global, national, regional, and local/community levels.

3 units

HRTM 265. Graduate Research Seminar

Presentation, discussion, and evaluation of leisure research.

Prerequisite: HRTM 200, HRTM 202, or instructor consent.

3 units

HRTM 270. Graduate Internship in Recreation

A 12-week, 20 hours per week internship in supervision and/or administration in a leisure service agency under the joint supervision of agency personnel.

5 units

HRTM 298. Special Studies

Individual work investigating special topics/problems through research and/or applied projects.

Prerequisite: HRTM 202

Repeatable for credit

Credit / No Credit

1-3 units

HRTM 299. Master's Thesis

Supervised thesis in the field of recreation or tourism.

Prerequisite: Admission to candidacy for the master's degree; HRTM 202,

Repeatable for credit

Credit/No Credit/Report in Progress

Humanities and the Arts – Interdisciplinary Courses

College of Humanities and the Arts

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

Courses

HUMANITIES AND THE ARTS

UPPER DIVISION

HA 154. History of the Jews

See HIST 154.

3 units

HA 157. Community Action/Community Service

See EDUC 157.

Repeatable for credit

GE: S

3 units

Humanities

College of Humanities and the Arts

Clark Hall 419
408-924-4463

Professors

Mira Z. Amiras
Scot M. Guenter
Hanns J. Hohmann
Christian Jochim, Chair
Richard E. Keady
Jennifer Rycenga
Yen Lu Wong

Associate Professors

Marianina Olcott
Cynthia Rostankowski
Susan von Rohr Scaff

Assistant Professors

Todd Ormsbee
Chanh Cong Phan
Shantanu Phukan
Shannon Rose Riley
Susan Verducci-Sandford

Curricula

- BA, Humanities
- BA, Liberal Studies (Liberal Arts)
- BA, Liberal Studies, Preparation for Teaching
- Minor, American Studies
- Minor, Humanities
- Minor, Middle East Studies
- Minor, Asian Studies
- BA, Creative Arts
- Minor, Creative Arts
- BA, Religious Studies
- Minor, Religious Studies

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 stories, 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. Marianina Olcott, 924-4455; molcott@email.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:** Marianina Olcott, Scot Guenter, Christian Jochim

Designed for students who are interested in interdisciplinary studies, the humanities major features emphases in American studies, East Asian studies, and European studies. For each emphasis, the major requires a total of 39 units, of which 24 are interdisciplinary core course units in humanities and 15 are course units in related disciplines or areas.

A special feature of the major is its flexibility. While the emphases represent coherent programs, they also offer considerable choice within the numerous area electives that allow students to develop individual programs of study to suit their own interests and needs. Devised to provide students with a liberal education through heightened awareness, broad knowledge and critical thinking, the humanities major prepares students for many professional programs and occupations such as law, librarianship, social work, communications, teaching and public service.

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 for the Major** 0-10

One year of college level foreign language or equivalent related to chosen emphasis

Requirements in the Major 39

Choose one emphasis.

American Studies Emphasis 39**Required Core Courses** 24

AMS 159, AMS 160, AMS 169, AMS 179, AMS 190, HUM 120A, HUM 120B and HUM 128

Electives 15

One course from each of the following areas, plus one course from any one of the areas:

Values and Ideas: AAS 185, POLS 163, HIST 173, RELS 162, RELS 191

Arts and Popular Culture: ENGL 162, ENGL 163, ENGL 164, ENGL 166, ARTH 182B, MUSC 120, TA 103, AFAM 102, COMM 169

Politics and Society: HIST 175, HIST 179, HIST 181, HIST 187, SOCI 169

Gender and Ethnicity: AFAM 125, AFAM 142, AFAM 152, HIST 188, WOMS 160, ANTH 175, ENGL 165, ENGL 169, LING 129

East Asian Studies Emphasis 39**Required Core Courses** 24

HUM 070B, HUM 114, HUM 142, HUM 144, HUM 160, HUM 190, PHIL 104 and MUSC 019

Electives 15

One course from each of the following areas, plus one course from any one of the areas:

Literature and Philosophy: CHIN 140, HUM 121, HUM 122

The Arts: ARTH 070C, ARTH 194A, ARTH 195, DANC 102

Geography, History, and Politics: GEOG 160, HIST 109A, HIST 109B, HIST 110A, HIST 110B, POLS 145

Culture and Society: ANTH 177, CHIN 102, JPN 102, LING 122

European Studies Emphasis 39**Required Core Courses** 24

HUM 119A, HUM 119B, HUM 120A, HUM 120B, HUM 128, HUM 160 and HUM 190 (21); AMS 159, AMS 169 or AMS 179 (3)

Electives 15

One course from each of the following areas, plus one course from any one of the areas:

Values and Ideas: HIST 124, HIST 142, PHIL 106, PHIL 108, RELS 131, RELS 151, RELS 153

The Arts: ARTH 185, ARTH 186A, ARTH 186B, ARTH 187A, ARTH 187B, ARTH 188A, ARTH 189A, ARTH 190A, MUSC 110, MUSC 111, TA 120, TA 121, TA 127, CA 172, CA 173

Literature: ENGL 121, ENGL 118, ENGL 125A, 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: HIST 115, HIST 116, HIST 117, HIST 121A, HIST 121B, HIST 122, HIST 144, POLS 160A, POLS 160B, ENGL 182

Electives and/or Minor 31-37**Total Units Required** 120**BA – Liberal Studies (Liberal Arts)****Advisor:** Tamara Goldie

Liberal Studies is an interdisciplinary major, involving departments from the Colleges of Humanities and the Arts, Social Sciences and Science. Within the program's broad scope, special emphasis is given to literature, language arts and the humanities. The wide range of subjects explored in this major provides excellent preparation for many professional goals and graduate degrees in such fields as library science, law, business, nonprofit or government work. Whatever careers students may eventually choose, they will find that Liberal Studies has enhanced their appreciation of literature, history, philosophy and the arts and deepened their understanding of the human condition.

Semester Units

General Education Requirements 21

Of the 51 units required by the university, 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**Requirements in the Major** 76**Humanities** 15

One course in Western Culture: HUM 119A, HUM 119B, HUM 120A, HUM 120B or HUM 128 (3); *One course in American Culture:* AMS 159,

AMS 169, AMS 179, RELS 162 or RELS 191 (3); *One course in Religious Studies:* RELS 114,

RELS 122, RELS 131, RELS 156, RELS 161 or

RELS 164 (3); *One course in Philosophy:* PHIL 066, PHIL 070A, PHIL 070B, PHIL 104, PHIL 108 or PHIL 122 (3); *One additional course from any of the above areas* (3)

Literature 9

One course in American literature: ENGL 068A, ENGL 068B, ENGL 162, ENGL 165, ENGL 168 or ENGL 169 (3); *One course in British literature:* ENGL 056A, ENGL 056B, ENGL 078, ENGL 148, ENGL 149 or ENGL 151 (3); *One course in World literature:* CHIN 140, CLIT 121, CLIT 122 or ENGL 125A (or an advisor-approved course in literature in a foreign language) (3)

The Arts 9

One Art course: ARTH 070A, ARTH 070B, ARTH 070C, CA 172 or CA 173 (3); *One Music course:* MUSC 012, MUSC 019, MUSC 111, MUSC 117, MUSC 120 or RELS 121 (3); *One Dance or Theatre Arts course:* DANC 010, TA 010, TA 120, TA 127 or TA 131 (3)

History and Social Science 12

One Geography course: GEOG 010, GEOG 101, GEOG 121 or GEOG 140 (3); *One Environmental Studies course:* AMS 159 or ENVS 001 (3); *One History course outside America:* HIST 105B, HIST 107, HIST 109B, HIST 110B, HIST 142, HIST 155, HIST 164 or HIST 166 (3); *One Behavioral Science course:* ANTH 025, ANTH 135, ANTH 140, PSYC 001, SOCI 001 or SOCI 057 (3)

Science 6

One course from GE Area R: ASTR 101, BIOL 101, BIOL 110, GEOL 103, GEOL 105, GEOL 111 or METR 112 (3); *One other upper division course:* GEOL 108 or PHYS 166 (3)

Mathematics 6

Complete two courses from: MATH 008, MATH 010, MATH 012, MATH 019, MATH 030, MATH 030P, MATH 070, MATH 071, MATH 105, PHIL 009, SOCI 015, STAT 095 (6)

Introduction to Liberal Studies 1

HUM 085

Depth of Study 12

Choose one option. Courses cannot duplicate those taken for any major requirements above.

Western Cultures 12

HUM 119A, HUM 119B, HUM 120A and HUM 120B

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

Capstone Course 3

HUM 190

Electives 0-21

One year of a second language and/or ASL recommended.

Total Units Required 120

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 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	9-12
Of the 51 units required by the university, up to 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	91-97
Reading, Language and Literature	18
ENGL 001A, ENGL 001B and ENGL 112A (9); ENGL 103 or LLD 107 (3); LLD 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); SOCS 137, SOCS 138 and SOCS 139 (9)	
Mathematics	9
MATH 012, MATH 105 and MATH 106	
Science	12
BIOL 021, CHEM 035 and GEOL 103 (9); 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 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)	
Introduction to Liberal Studies	1
HUM 085	
Depth of Study	12
Choose One:	
Western Cultures	12
HUM 119A, HUM 119B, HUM 120A and HUM 120B	
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	9-18
One year of second language or ASL recommended. If proficient in a foreign language, EDTE 190 and EDSE 192.	
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).

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).

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
Fifteen units of upper-division Humanities courses, as approved by the advisor (15); HUM 190 (3)	

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).

Courses

HUMANITIES

LOWER DIVISION

HUM 001A. Background of Western Culture and Society

To the seventeenth century. Institutions, thought and literary and artistic expression of the ancient world, medieval society and early modern Europe. Written expression and oral discussion.

Note: Entire sequence satisfies GE Areas A1,2,3; C1,2,3; D2,3; F1,2,3.

GE: M4
6 units

HUM 001B. Background of Western Culture and Society

To the seventeenth century. Institutions, thought and literary and artistic expression of the ancient world, medieval society and early modern Europe. Written expression and oral discussion.

Prerequisite: HUM 1A

Note: Entire sequence satisfies GE Areas A1,2,3; C1,2,3; D2,3; F1,2,3.

GE: M2
6 units

HUM 002A. Modern Culture and Social Institutions

Seventeenth century to the present. Interrelationships between Europe and America. Modern political, economic and philosophical ideas and institutions, literary and artistic expression. Written expression and oral discussion.

Prerequisite: HUM 1B.

Note: Entire sequence satisfies GE Areas A1,2,3; C1,2,3; D2,3; F1,2,3.

GE: M3
6 units

HUM 002B. Modern Culture and Social Institutions

Seventeenth century to the present. Interrelationships between Europe and America. Modern political, economic and philosophical ideas and institutions, literary and artistic expression. Written expression and oral discussion.

Prerequisite: HUM 2A.

Note: Entire sequence satisfies GE Areas A1,2,3; C1,2,3; D2,3; F1,2,3.

GE: M1
6 units

HUM 070A. Western Religions

See RELS 070A.

GE: C2
3 units

HUM 070B. Eastern Religions

See RELS 070B.

GE: C2
3 units

HUM 085. Integration of Liberal Studies

Provides understanding of the humanities as a discipline; a rationale for a wide-ranging academic program in preparation for teaching and other careers; guidance in establishing academic and professional goals. Presents liberal education in the context of a diverse population and a changing economy.

1 unit

HUM 090. Bible History and Literature

See RELS 090.

GE: C2
3 units

HUM 099. Death, Dying and Religions

See RELS 099.

GE: E
3 units

UPPER DIVISION**HUM 100W. Writing in the Humanities**

Advanced workshop in composition and reading. Composition further develops skills of Core G.E.: writing expository essays, doing library research. Readings acquaint students with major works and ideas of Eastern and Western civilizations.

Prerequisite: Completion of core GE, ENGL 1B (with a grade of C or better), satisfaction of Writing Skills Test and upper division standing.

ABC/No Credit
GE: Z
3 units**HUM 106. History of the Holy Land**

See HIST 106.

3 units

HUM 114. Legacy of Asia

Interdisciplinary focus on continuity and change in China and India as these ancient civilizations responded to challenges throughout their history.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: V
3 units**HUM 119A. Interdisciplinary Studies of Antiquity**

Interrelationships of institutions, thought, literature and arts in Europe during selected periods of ancient Greece and Rome.

3 units

HUM 119B. Interdisciplinary Studies of the Middle Ages

Interrelationships of institutions, thought, literature and arts in Europe during selected periods of the Middle Ages.

3 units

HUM 120A. Interdisciplinary Studies of the Renaissance and Baroque Eras

Interrelationships of institutions, thought, literature and arts in Europe during the fifteenth, sixteenth and seventeenth centuries.

3 units

HUM 120B. Interdisciplinary Studies of the Enlightenment and Romantic Eras

Interrelationships of institutions, thought, literature and arts in Europe from about 1700 to 1850.

3 units

HUM 121. Introduction to Comparative Literature

See CLIT 121.

3 units

HUM 122. Topics in Comparative World Literature

See CLIT 122.

Repeatable for credit
3 units**HUM 126. Holocaust Literature**

See ENGL 126.

3 units

HUM 128. Perspectives on the Twentieth Century: The West in a Global Context

Literature and the arts of selected world cultures contextualized in significant events and concepts of the twentieth century, such as two world wars, totalitarian systems, the revolt against colonial powers, modernity and postmodernity, and the global challenge to western hegemony.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: V
3 units**HUM 134. Religion Film & Media**

See RELS 134.

3 units

HUM 141. Medieval Literature

See ENGL 141.

3 units

HUM 142. Contemporary Buddhism and its Roots

See RELS 142.

3 units

HUM 143. Spiritual Traditions of India

See RELS 143.

3 units

HUM 144. Chinese Traditions

See RELS 144.

3 units

HUM 155. Pagan Traditions

See RELS 155.

3 units

HUM 157. Islamic Cultures

See RELS 157.

3 units

HUM 159. Nature and World Cultures

See AMS 159.

GE: V

3 units

HUM 160. Contemporary Issues

Vital issues and enduring ideas in modern life (ethical, political, social, etc.) as seen in the contemporary world. Content varies each semester and with instructor.

Repeatable for credit
3 units**HUM 168. Global Climate Change I**

See COMM 168.

6 units

HUM 168W. Global Climate Change II

See COMM 168W.

ABC/No Credit
GE: R+S+V+Z
3 units**HUM 169. The American Dream**

See AMS 169.

GE: S

3 units

HUM 179. American Popular Culture

See AMS 179.

3 units

HUM 180. Individual Studies

Directed reading and thesis by arrangement.

Prerequisite: Department chair consent.
Repeatable for credit
Credit / No Credit
1-3 units**HUM 183C. Art of Islam 13th-19th Century**

See ARTH 183C.

3 units

HUM 185. Field Experience in Humanities

Supervised field work for liberal studies and humanities majors. Includes weekly meetings to discuss readings and field work experiences and to reflect upon humanities education, multicultural school settings and other nonprofit agencies and organizations that promote the humanities.

Prerequisite: HUM 85.
Credit / No Credit
3 units**HUM 190. Senior Seminar in Humanities**

Readings, discussions and individual research projects relating to an interdisciplinary theme selected by the instructor.

Prerequisite: Any 100W class.
3 units**HUM 191. Religion in America**

See RELS 191.

GE: S
3 units

Industrial and Systems Engineering

College of Engineering

Engineering 485
408-924-3301
408-924-4040 (Fax)
ise@email.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
Louis E. Freund, Chair
H.S. Jacob Tsao

Associate Professors

Niranjani Patel

Curricula

- BS, Industrial and Systems Engineering
- Minor, Engineering Management
- Minor, Statistical Quality Engineering
- MS, Industrial and Systems Engineering
- MS, Human Factors/Ergonomics

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 undergraduate curriculum is accredited by the Accreditation Board of Engineering Technology (A.B.E.T.).

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.

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**Minor – Engineering Management**

Semester Units

Required Courses 6

ISE 102 and ISE 151

Additional Requirements 6

Choose 2 of three:

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); ISE 131 and ISE 135 (6)

Additional Requirements 3

At least one of these courses is required.

ISE 102 or ISE 151

Total Units Required 12**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 Studies and Research website at www.sjsu.edu/gradstudies. 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 coursework 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 6-9

ISE 200, ISE 230 or ISE 235

Courses in an ISE Specialty Area 12-18

Courses from (a) systems and information modeling, (b) production and quality assurance, (c) human factors, (d) supply chain engineering, or (e) service systems engineering.

Electives 6

Courses selected from other ISE specialty areas or approved by the graduate advisor.

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

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 Studies and Research website at www.sjsu.edu/gradstudies. 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	8
ISE 210; ISE 135, ISE 202 or PSYC 235; ISE 290	
Psychology	3
PSYC 273	
Kinesiology	3
KIN 266	
Industrial Design	3
DSID 226 or DSID 131	
Electives	9
Thesis or Creative Project	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.

Courses

INDUSTRIAL AND SYSTEMS ENGINEERING

UPPER DIVISION

ISE 102. Engineering Economic Systems

Systems analysis applied to economic decisions in engineering; comparison of alternatives based on cost breakdown structure and time value of money; system life-cycle process; life-cycle economic concepts, costing methodology and applications.

Prerequisite: MATH 31 and ENGR 10 or equivalent.
3 units

ISE 105. Introduction to Systems Engineering and Activity Costing

Techniques for integrating engineering problem solving methods with systems theory including principles of problem identification, description, modeling, solution and implementation; applying traditional and activity based cost systems to assist engineers in decision making process through the product life cycle.

Prerequisite: MATH 31.
3 units

ISE 110. Manufacturing Processes

See ME 110.

3 units

ISE 112. Occupational Health Engineering

Legislative framework and historical perspective of work-related injuries and diseases: prevention assessments, legal and regulatory issues surrounding solutions to occupational health problems, principles of industrial hygiene and program management.

Prerequisite: Junior standing in engineering.
3 units

ISE 114. Safety Engineering

Hazards, accident prevention and engineering approaches to the design of equipment, facilities and processes. Provides familiarity with system safety, system evaluation and evaluation of alternative countermeasures. Latest safety regulations and agencies responsible for their enforcement.

Prerequisite: Junior standing.
3 units

ISE 115. Computer Integrated Manufacturing

Analyze, design and integrate manufacturing processes with CAD/CAM technologies including numerical control, material handling and storage, group technology and computer control.

Prerequisite: ISE 120.
Lecture 2 hours/lab 3 hours.
3 units

ISE 120. Work Methods Design and Measurement

Design of efficient and effective work processes; includes process management, methods analysis and improvement and work measurement.

Prerequisite: ISE 130.
Lecture 2 hours/lab 3 hours.
3 units

ISE 130. Engineering Probability and Statistics

Probability theory, graphical displays of data, graphical methods of comparisons of samples and hypotheses testing. Statistical estimation and inference. Uses graphical statistical packages.

Prerequisite: MATH 32.

3 units

ISE 131. Statistical Process Control and Improvement

Statistical computations, sampling procedures, development and use of control charts and utilization of computerized statistical packages. Design of statistical quality control systems. The seven tools of quality; process capability studies.

Prerequisite: ISE 130 (with a grade "C-" or better) or equivalent.

3 units

ISE 135. Design of Experiments

Tests of composite hypotheses, analysis of variance, statistical decision theory, sampling procedures, design and implementation of statistical process control systems, response surface experimental design, Taguchi experimental design, system reliability, utilization of computerized statistical packages.

Prerequisite: ISE 130 (with grade of "C-" or better) or equivalent.

3 units

ISE 140. Operations Planning and Control

Design, implementation and evaluation of manufacturing, planning and control systems. Includes MRP II, ERP, JIT.

Prerequisite: ISE 102, ISE 120, ISE 170.

3 units

ISE 142. Service Systems Engineering and Management

Operational productivity, operational quality strategy and information technology applications in the service sector through the use of tools, techniques and case studies. Contrasts manufacturing and service sector issues related to supply chain, process quality, information systems and other topics.

Prerequisite: Upper division standing.

3 units

ISE 145. Lean Manufacturing

See TECH 145.

3 units

ISE 151. Managing Engineering

Broad overview of engineering management theory and practice including: management's roles, responsibilities, skills, strategy and planning; management systems, human resource management, problem solving and decision-making; engineering ethics.

Prerequisite: 100W course.

3 units

ISE 155. Supply Chain Engineering

A comprehensive coverage of supply chain topics; real world applications including logistics, inventory management, risk pooling, value of information, strategic alliance, procurement and outsourcing strategies, information technology, coordinated product and supply chain design, customer value, decision, support systems.

Prerequisite: ISE 140.

3 units

ISE 159. Materials Handling and Distribution

Materials handling equipment, transport and storage environments. Design of distribution systems for efficiency. Distribution cycles. Hazardous materials and military packaging. Monitoring and lab simulation of distribution hazards.

Prerequisite: ISE 135, ISE 158.

3 units

ISE 162. Engineering Statistics and Analysis

See CHE 162.

3 units

ISE 164. Computer and Human Interaction

Introduction to human/computer interaction, paradigms for interaction, human performance capabilities, computer input/output device analysis and design, pattern recognition 3D audio, 3D visualization, application to virtual reality and multimedia.

Prerequisite: Junior standing.

3 units

ISE 167. System Simulation

Introduction to simulation. Monte Carlo techniques. Design and use of discrete-event computer simulation modeling techniques; theoretical and practical treatment of input to models; model validation methods and output analysis. Synchronized sampling, model comparisons.

Prerequisite: CMPE 30 or CMPE 46; ISE 130 (with grade of "C-" or better); ISE 170.

Lecture 2 hours/lab 3 hours.

3 units

ISE 170. Operation Research

Development and application of mathematical models to industrial problems. Linear programming, network analysis, Markov models, game theory, queuing theory and decision analysis.

Prerequisite: ISE 130 (with grade of "C-" or better).

Pre/corequisite: MATH 123.

3 units

ISE 180. Individual Studies

Individual work on special topics by arrangement.

Prerequisite: Upper division standing and instructor consent.

Repeatable for credit

Credit / No Credit

1-3 units

ISE 190. Industrial Engineering Design

Design of a complete industrial system including quality function development, technology trends, financial analysis, functional specifications, process design, production capability, quality management, manufacturing resources planning, equipment requirements, human resource management, management information systems, facility design, and project management.

Prerequisite: ISE 115, ISE 140 and instructor consent.

Lecture 2 hours/lab 3 hours.

3 units

ISE 195A. Senior Industrial Engineering Design I

Individual or group design projects. Proposal preparation with plans and specifications. Oral and written reports. Professional seminars.

Prerequisite: ISE 105, ISE 120, ISE 170, ENGR 100W, major form on file and senior standing.

Lab 3 hours.

1 unit

ISE 195B. Senior Industrial Engineering Design II

Design of a complete industrial system including quality function deployment, technology trends, financial analysis, functional specifications, process design, production capability, quality management, manufacturing resource planning, equipment requirements, human resource management, management information systems, facility design and project management.

Prerequisite: ISE 140 and ISE 195A (with grade of "C" or better).

Lab 9 hours.

3 units

ISE 197. Cooperative Education Project

See ENGR 197.

3 units

ISE 199. Special Topics in Industrial & Systems Engineering

Special Topics in Industrial & Systems Engineering. Content varies from semester to semester. May be repeated for a total of 6 units.

Prerequisite: Instructor approval.

Repeatable for credit

3 units

GRADUATE

ISE 200. Financial Methods for Engineers

Systematic approach and methods for engineering decision making where economic outcomes are principal criteria. Accounting analysis and decision making topics that aid in understanding the relationships between various functional areas of business and the decision making processes of engineering managers.

3 units

ISE 201. Software Engineering Analysis

Mathematical concepts, techniques relevant to software engineering, motivation by real world examples. Discrete mathematics including: Algorithms, efficiency, mathematical induction. Probability, statistics including set theory, combinatorics, random variables, distributions, estimation, confidence interval, hypothesis testing, regression.

Prerequisite: MSE or CMPE graduate standing.

3 units

ISE 202. Design and Analysis of Engineering Experiments

Review of statistical inference and tests of hypotheses. Introduction to analysis of variance and covariance. Theory and applications of experimental designs for engineering problems. Random and systematic designs. Randomized blocks. Latin squares. Factorial and fractional factorial designs. Taguchi methods.

Prerequisite: ISE 130.

3 units

ISE 210. Human Factors/Ergonomics

Analysis and evaluation of work systems in terms of the capabilities and limitations of human participants. Person as a system component. Emphasis is on evaluation of how work affects people and how people affect the work.

Prerequisite: Graduate standing.

3 units

ISE 212. Human Factors Experiments

Research and experimentation on specific aspects of the person as a system or in systems. Particular emphasis is placed on in-depth studies of unique human factors.

Prerequisite: ISE 210 or instructor consent.

3 units

ISE 215. Usability Evaluation and Testing

Seminar is designed to provide students with a comprehensive overview of usability testing methods, as applied to systems products and software-web applications. Course will address testing methods, processes and marketing justification for usability testing.

Prerequisite: ISE 130 or instructor consent.
3 units

ISE 217. Human Computer Interaction

Human performance characteristics, computational tools, and HCI applications. How to access/evaluate HCI requirements, to design HCI requirements, to assess the impact of design on performance, and to generalize the design implication to system function.

3 units

ISE 219. Research in Human Computer Interaction

Concepts of Human and Computer Information Processing to support research, design and analysis of the effectiveness of human/machine systems in meeting performance objectives. Review of important and recent research in a broad range of HCI topics.

3 units

ISE 222. Advanced Systems Engineering

Comparison of different kinds of systems; unique characteristics. Mathematical models for the description, analysis and design of systems. Synthesis and analysis of systems of various types. Theory of organizations, information theory and control theory applied to problems in system design.

Prerequisite: ISE 130.
3 units

ISE 230. Advanced Operations Research

Advanced operations research techniques and topics. Practical consideration in understanding and utilizing operations research methods. Critical analysis of case studies.

Prerequisite: ISE 130.
3 units

ISE 232. Industrial Systems Seminar

Familiarization with research techniques in industrial and systems engineering. The broad range of literature studies will develop the student's ability to solve practical engineering problems in areas not previously encountered.

Prerequisite: Instructor consent.
3 units

ISE 235. Quality Assurance and Reliability

Selection of adequate variables to monitor a manufacturing/service process; quality improvement through process design, vendor management, customer feedback and product development; use of statistical control charts, the Pareto principle, PDCA, process capability; design for reliability, statistical techniques for analysis of reliability and reliability growth.

Prerequisite: ISE 130 (or equivalent).
3 units

ISE 240. Mathematical Models in Systems Engineering

A rigorous study of the formulation and analysis of mathematical models used in operations research. Markov chains. Algorithms for solution of discrete optimization problems. Integer and Evolutionary programming. Sequential search minimization problems.

Prerequisite: ISE 130.
3 units

ISE 241. Advanced Operations Planning and Control

Design, implementation and evaluation of production and service systems; manufacturing strategy, choice of processes, resources planning, production and procurement control, forecasting methods, scheduling considerations and decision-making techniques.

Prerequisite: ISE 140 or instructor consent.
3 units

ISE 242. Advanced Service Systems Engineering and Management

Advanced studies of operational productivity, operational quality, strategy and information technology applications in the service sector through the use of tools, techniques and case studies. Current literature review of issues related to service sector productivity, quality and value.

Prerequisite: Graduate standing.
3 units

ISE 245. Advanced Supply Chain Engineering

Supply chain concepts, strategies; emphasis on analytical tools to solve supply chain problems. Fundamentals of supply chain modeling of inventory, transportation, location, facility planning problems. Information sharing, risk pooling. Mechanisms for increasing profits.

Prerequisite: ISE 140.
3 units

ISE 247. Logistics for Supply Chain

An exploration of logistics for entire supply chain system from inbound movement through material management to physical distribution to customers. Topics include: packaging and handling, material management, transportation and traffic management, facility location and global logistics.

Prerequisite: Graduate standing.
3 units

ISE 250. Leading the Six Sigma Improvement Project

Improvement projects are critical. Covers Six Sigma methodology, problem-solving tools to improve cost, quality, time and variability. Management of projects, teams, change, and benchmarking; root cause problem solving, and implementation effectiveness. Practical experience through course project.

Prerequisite: Instructor consent.
3 units

ISE 251. Managing the Lean Enterprise Improvement Program

The elements of an effective organizational improvement program composed of multiple projects. Covers capabilities-based strategy; dimensions of performance such as cost, quality and time; when to use Six Sigma, Lean, Theory of Constraints and Reengineering.

Prerequisite: Instructor consent.
3 units

ISE 265. Advanced System Simulation

Use of computerized simulation and modeling techniques to conduct experiments, evaluate the costs of a process, evaluate alternative inspection policies and determine effects of JIT management models for shop setting.

Prerequisite: ISE 167 or instructor consent.
3 units

ISE 270. Information Engineering

Technologies, strategies and systems for planning, analyzing, designing and implementing data resources in order to ensure and continuously improve processes in the enterprise; object-oriented development, Computer-Aided Software/Systems Engineering (CASE); information superhighway, client/server computing and distributed database management systems.

Prerequisite: CMPE 46 or instructor consent.
3 units

ISE 290. Human Factors & Ergonomics Professional Seminar

Real world skills necessary to start your professional HR/Ergo career, i.e. public presentation, terminology, field evaluations, current research and industry issues in human factors and ergonomics.

Prerequisite: Graduate standing.
Credit / No Credit
2 units

ISE 297. Special Topics in Industrial Engineering

Special topics to augment regularly-scheduled courses.

Prerequisite: Graduate standing in industrial engineering.
Repeatable for credit
1-4 units

ISE 298. Special Problems

Advanced individual work in industrial engineering.
Prerequisite: Instructor consent.
Repeatable for credit
Credit / No Credit
1-4 units

ISE 299. Master's Thesis

Prerequisite: Consent of thesis advisor.
Repeatable for credit
Credit/No Credit/Report in Progress
1-4 units

Interdisciplinary Studies

Graduate Studies and Research

Pamela C. Stacks,
Associate Vice President

Rhea L. Williamson, Associate Dean

Administration 223
408-924-2427
www.edu.sjsu/gradstudies

Curricula

- MA, Interdisciplinary Studies
- MS, Interdisciplinary Studies

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

College of Social Sciences

Business Tower (BT) 559
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

The interdepartmental minor in Jewish Studies consists of courses taken from the Departments of English, Foreign Languages, History, Political Science, Radio, Television and Film 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

Courses

JEWISH STUDIES

LOWER DIVISION

JWSS 010A. Elementary Hebrew

See HEBR 010A.
3 units

JWSS 010B. Elementary Hebrew

See HEBR 010B.
3 units

JWSS 015A. Intermediate Hebrew

See HEBR 015A.
3 units

JWSS 015B. Intermediate Hebrew

See HEBR 015B.
3 units

JWSS 090. Bible History and Literature

See RELS 090.
GE: C2
3 units

UPPER DIVISION

JWSS 102A. Advanced Hebrew

See HEBR 102A.
3 units

JWSS 102B. Advanced Hebrew

See HEBR 102B.
3 units

JWSS 106. History of the Holy Land

See HIST 106.
3 units

JWSS 108. Jewish Mysticism, Magic and Folklore

See RELS 108.
3 units

JWSS 115. Ancient Near East

See HIST 115.
3 units

JWSS 122. Topics in Comparative World Literature

See CLIT 122.
Repeatable for credit
3 units

JWSS 126. Holocaust Literature

See ENGL 126.
3 units

JWSS 136. WWII Press Coverage: Holocaust Concentration Camps and Japanese Internment Camps

See MCOM 136.
3 units

JWSS 144. Middle Eastern Politics

See POLS 144.
3 units

JWSS 152. Visual Culture and Jewish Identity

See ARTH 152.
Repeatable for credit
3 units

JWSS 153. Jews, Zionism, and the State

See RELS 153.
3 units

JWSS 154. History of the Jews

See HIST 154.
3 units

JWSS 166. Topics in Cinema Studies

See RTVF 166.
Repeatable for credit
3 units

JWSS 180. Individual Studies

Directed studies in relevant fields not covered by courses offered.
Prerequisite: Instructor consent and program coordinator.
Repeatable for credit
Credit / No Credit
1-3 units

Journalism and Mass Communications

College of Applied Sciences and Arts

Dwight Bentel Hall 105
408-924-3240 (Voice)
408-924-3229 (Fax)
www.jmcweb.sjsu.edu/index.html

Professors

Cecilia Baldwin
William G. Briggs, Director
Harvey L. Gotliffe
Stephen L. W. Greene
Clyde E. Lawrence
Diana Stover
William A. Tillingshast
Dennis L. Wilcox

Associate Professors

Mathew Cabot
Richard Craig
Scott Fosdick
Kathleen Martinelli
Robert Rucker

Assistant Professors

Lilly Anne Buchwitz
Duane Michael Cheers
Timothy Hendrick

Curricula

- BS, Advertising
- BS, Journalism
- BS, Public Relations
- Minor, Advertising
- Minor, Journalism
- Minor, News Media Design
- Minor, Public Relations
- MS, Mass Communications

"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, 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. Please note that School policy requires all major to own their own notebook computer and purchase selected software programs.

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

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 coursework 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 110 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 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
Preparation for the Major and Supporting Courses	24
Literature elective (3); BUS 130 (3); Art elective (3); academic focus in an academic department with approval of school academic advisor (12); Management Track students take BUS 090 or STAT 095 (3); Creative Track students take ENGL 071 (3)	
Requirements in the Major	40
MCOM 072, MCOM 100W, MCOM 101 and MCOM 111 (13); MCOM 070, MCOM 105 or MCOM 106 (3); MCOM 103 or MCOM 104 (3); ADV 091 and ADV 129 (6); Approved electives in journalism, advertising, public relations or mass communications (3); <i>Management Track Option</i> : ADV 126 and ADV 128 (6); Complete two courses from: ADV 116, ADV 121, ADV 122, ADV 123, ADV 124, ADV 125 (6); <i>Creative Track Option</i> : ADV 124 and ADV 125 (6); Complete two courses from: ADV 116, ADV 121, ADV 122, ADV 123, ADV 126, ADV 128 (6)	
Electives	9
Total Units Required	120

Reporting and Editing (Newspaper Emphasis)

JOUR 061, JOUR 132A, JOUR 133, JOUR 135, JOUR 153 and JOUR 155 (18); Approved electives in journalism, advertising, public relations or mass communications (3)	21
Electives	15-18
Total Units Required	120

BS – Public Relations

	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
BUS 130 and COMM 144 (6); academic focus in an academic department with approval of school academic advisor (12)	
Requirements in the Major	40
MCOM 072, MCOM 100W, MCOM 101 and MCOM 111 (13); 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 (15); Approved electives in journalism, advertising, public relations or mass communications (3)	
Electives	15
Total Units Required	120

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	15-18
POLS 103 (3); academic focus in an academic department with approval of school major academic advisor (12); <i>Photo Emphasis</i> : PHOT 040 (3)	
Requirements in the Major	40
Common Core	19
MCOM 072, MCOM 100W, MCOM 101 and MCOM 111 (13); MCOM 070, MCOM 105 or MCOM 106 (3); MCOM 103 or MCOM 104 (3)	
Choose an Emphasis	21
Magazine Emphasis	21
JOUR 061, JOUR 132C, JOUR 133, JOUR 135, JOUR 153 and JOUR 155 (18); Approved elective in journalism, advertising, public relations or mass communications (3)	
Photojournalism Emphasis	21
JOUR 061 (3); JOUR 132A, JOUR 132B or JOUR 132C (3); JOUR 133, JOUR 135, JOUR 153 and JOUR 155 (12); Approved elective in journalism, advertising, public relations or mass communications (3)	
Radio/Television News Emphasis	21
JOUR 061, JOUR 132B, JOUR 133, JOUR 135, JOUR 153 and JOUR 155 (18); Approved electives in journalism, advertising, public relations or mass communications (3)	

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, Emphases in Photojournalism, Radio-TV, Reporting and Editing

	Semester Units
Photojournalism Emphasis	18
MCOM 072, JOUR 061, JOUR 142, JOUR 144 and JOUR 145 (15); Approved electives in journalism, advertising, public relations or mass communications (3)	
Radio-Television Emphasis	18
MCOM 072, JOUR 061, JOUR 163, JOUR 164 and JOUR 165 (15); Approved electives in journalism, advertising, public relations or mass communications (3)	
Reporting-Editing Emphasis	18
MCOM 072 (core GE) (3); JOUR 061 (3); JOUR 153 or PR 190 (3); JOUR 133 (3); Approved electives in journalism, advertising, public relations or mass communications (3)	

Total Units Required

Minor – News Media Design	
	Semester Units
Core Courses	9
MCOM 070, JOUR 135 and JOUR 144	
Electives	6
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	
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 1,500; 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 Studies and Research website at www.sjsu.edu/gradstudies.

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 and an oral presentation to a faculty-student audience. The professional quality project can take a variety of forms – a series of newspaper or magazine articles, a radio or television documentary, a photo essay, an advertising or public relations campaign, surveys, etc. 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.

	Semester Units
Required Courses	21
Plan A (Thesis)	21
MCOM 210, MCOM 290, MCOM 295 and MCOM 298 (15); Complete two of: MCOM 240, MCOM 250, MCOM 260, MCOM 270, MCOM 280, or other graduate electives (6)	
Plan B (Project)	21
MCOM 210, MCOM 290, MCOM 295 and MCOM 298 (15); Complete two of: MCOM 240, MCOM 250, MCOM 260, MCOM 270, MCOM 280, or other graduate electives (6)	
Electives	9
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

MCOM 210 is required only for those students without experience or an undergraduate degree in a related field. The course is also required of all international students. If not required then course can be taken as an elective and three electives would then be required.

Courses

ADVERTISING

LOWER DIVISION

ADV 091. Introduction to Advertising

Comprehensive survey of the basic principles of advertising. Topics include: strategic planning, integrated communications, audience targeting, creative strategy, advertising media, social responsibility, advertising ethics, international advertising, and current issues in advertising.

3 units

UPPER DIVISION

ADV 116. Spartan Daily Advertising Staff

This class constitutes the paid advertising staff of the online and print editions of the Spartan Daily. Students work with clients and handle the newspaper's advertising sales and production.

Prerequisite: ADV 91 or instructor consent.

Daily lecture and production.

Repeatable for credit

3 units

ADV 121. Consumer Advertising

Principles and practices of advertising consumer products and services using traditional mass media, alternative media, and new media. Topics include consumer behavior; branding, targeting, and positioning; national brand advertising; retail strategy, advertising and merchandising.

Prerequisite: ADV 91.

3 units

ADV 122. Business-to-Business Advertising

Principles and practices of developing marketing communications programs and collateral materials for business-to-business products and services; translating technical information into persuasive communications; direct marketing, and other forms of sales support communications.

Prerequisite: ADV 091.

3 units

ADV 123. Broadcasting and New Media Advertising

History, development, and current applications of traditional broadcast advertising, the Internet as an advertising medium, and the implications of emerging new media. Focus is on creative strategy and media strategy.

Prerequisite: ADV 91.

3 units

ADV 124. Copywriting

Conceptual development. Advertising theory used in the development of writing, editing and evaluating advertising copy. Research methods and techniques. Ethical problems.

Prerequisite: ADV 091, MCOM 100W and ENGL 071.

3 units

ADV 125. Advertising Layout and Production

Principles of design applied to print advertising; print production theory and practical application. Preparation of layouts and mechanicals utilizing latest computer applications. Instruction in use of type, printing processes, types of paper, uses of color.

Prerequisite: ADV 91.

3 units

ADV 126. Media Planning and Buying

Theory, evaluation and selection of advertising media for a variety of target audiences; demographics and psychographics. Students plan, buy, and measure the success of a real media plan.

Prerequisite: ADV 091 and BUS 130.

3 units

ADV 128. Integrated Marketing Communications (IMC)

Learn how advertising, public relations, promotions, and marketing all work together to achieve campaign objectives. Strategic planning, budgeting, research, tactics, evaluation, presentation skills, and team building.

Prerequisite: Three ADV courses and BUS2 130.

3 units

ADV 129. Advertising Campaign Planning and Management

Capstone course in which students engage hands-on in the process and methods employed to develop a fully integrated advertising campaign based on the marketing objectives established by a real-world client.

Prerequisite: Four ADV courses and MCOM 111.

3 units

ADV 130. Advanced Layout and Production

Creative development, strategy, concept, and execution using InDesign and PhotoShop. Advanced layout and design principles, integration of language, and visual communication theory will be emphasized in product positioning.

Prerequisite: ADV 125 or instructor consent.

3 units

JOURNALISM

LOWER DIVISION

JOUR 061. Writing for Print, Electronic and Online Media

Introduction to writing for media--newspapers, magazines, electronic and the internet--as well as producing content for multi-media distribution in a converged media environment. Emphasis on how different media require different writing styles and content.

Prerequisite: ENGL 1A, ENGL 1B.

3 units

JOUR 095. Beginning Digital News Photography

Basic introduction to news photography and photojournalism field. Includes camera use - composition, aperture, shutter speed, and lens selection- and processing for print or electronic media using PhotoShop. Emphasis on technical aspects of digital news photography and storytelling with photographs.

3 units

UPPER DIVISION

JOUR 132A. News Reporting for Online and Print Media

Emphasis on reporting--gathering/verifying facts for news stories through observation, interviewing, attending press conferences/meetings, and using public record, electronic databases and the Internet/library. Writing enterprise, trend, feature, profile and investigative stories.

Prerequisite: JOUR 061 or instructor consent.

3 units

JOUR 132B. Reporting for Electronic Media

Emphasis on reporting--gathering/verifying facts and audio or video actualities through interviewing, attending press conferences/meetings, and using public records, electronic databases and the Internet/library. Producing news and features for electronic media and websites.

Prerequisite: JOUR 061 or instructor consent.

3 units

JOUR 132C. Magazine Reporting

Print and online writing for front-of-book, departments and feature stories. Emphasis on reporting--gathering/verifying facts through interviewing, observation, reconstruction, public records, and the Internet/library. Consideration of segmented readership and differences between consumer and trade magazines.

Prerequisite: JOUR 061 or instructor consent.

3 units

JOUR 133. Editing and News Management

Media Lab. for the editor serving as wordsmith and coach, a hands-on approach to copy editing and headline writing for online and print media. Students work as editors for media lab publications.

Prerequisite: JOUR 61 or instructor consent.

3 units

JOUR 134. In-Depth Online Reporting

Media Lab. Designed for experienced writers who want to report for online media. Includes feature and in-depth reporting as well as Web design for a team project.

Prerequisite: JOUR 61 or instructor consent.

3 units

JOUR 135. Reporting, Editing, and Management

Media Lab. A team of reporters, photographers and editors will produce the Spartan Daily online publications as well as its daily newspaper and magazines. The editors will direct the coverage, including digital photography and audio/video streaming. May be repeated for credit with instructor consent.

Prerequisite: Reporters, JOUR 61, JOUR 132A; Photographers, JOUR 142; Editors, JOUR 135 as reporters; non majors with demonstrated writing and/or Web-design skills, instructor consent.

Repeatable for credit

1-3 units

JOUR 136. Newspaper and Magazine Design

Principles of newspaper and magazine design--news judgment, story and headline hierarchy, typography, and meaningful visual storytelling through use of photos/art. Practice in creating newspaper pages and magazine layouts and cover designs.

Prerequisite: JOUR 061, JOUR 133 or instructor consent.

3 units

JOUR 142. Beginning Visual Journalism for Print/Electronic Media

Media Lab. Introduction to basic principles and practices of photojournalism for online media, newspapers, magazines and corporate publications, using still photographs to tell the story.

Prerequisite: JOUR 95 or instructor consent.

Lecture 2 hours/lab 3 hours.

3 units

JOUR 144. Picture Editing for Print/Electronic Media

Presentation and picture editing for online media, newspapers, magazines and other publications; visual tactics to bring readers to a page, picture selection, graphics, layout, design and ethical considerations using illustrative art and photography.

Prerequisite: Upper division standing.
3 units

JOUR 145. Advanced Visual Journalism for Print/Electronic Media

Media Lab. Advanced practices in photojournalistic storytelling with single and multiple picture color assignments. Technical emphasis on achieving proper color balance via lighting techniques. Aesthetic emphasis on pictures elevating a student's portfolio to professional level.

Prerequisite: JOUR 142 or instructor consent.
Lecture 2 hours/lab 3 hours.
3 units

JOUR 153. Magazine Writing & Editing

Overview of magazine field, focusing on reporting, writing, and editing. Students learn how an idea progresses from manuscript through art meetings to the printed or online page. Prepares students to produce San Jose State's student magazine, Access, in JOUR 155.

Prerequisite: Non-majors with demonstrated writing ability, instructor consent.
3 units

JOUR 155. Magazine Editing and Production

Media Lab. Editing/producing print and online versions of award-winning Access and Etc. magazines. Staff edits articles, art and photography submitted by media lab students and other SJSU freelancers.

Prerequisite: Non-majors with demonstrated writing, editing and/or Web-design skills, instructor consent.
Lecture 2 hours/activity 2 hours
Repeatable for credit
3 units

JOUR 163. Audio and Video Streaming for the Web

Media Lab. Instruction in producing ambient and auditory sound, digital and analog, for online publications. Video streaming for the Web.

Prerequisite: JOUR 61 or instructor consent.
Lecture 2 hours/activity 2 hours.
3 units

JOUR 164. Electronic News Gathering for Television

Media Lab. Principles and techniques of covering news for media. Instruction in all aspects of television news gathering, presentation and production including writing, shooting, editing, producing and anchoring. Includes both field and studio work.

Prerequisite: JOUR 61 or instructor consent.
Lecture 2 hours/activity 2 hours.
3 units

JOUR 165. Television News Staff

Media Lab. Reporting, shooting and editing in digital and analog formats, producing and anchoring for television. Working in the field and studio to produce a weekly newscast/Webcast. May be repeated for credit with instructor consent.

Prerequisite: JOUR 164 or instructor consent.
Repeatable for credit
1-3 units

MASS COMMUNICATIONS**LOWER DIVISION****MCOM 063. New Media**

See APSC 063.
3 units

MCOM 064A. Special Topics: Technology

Seminar/workshop course focusing on a particular technology skill for the advertising, journalism, or public relations professions.

Repeatable for credit
Credit / No Credit
1 unit

MCOM 070. Visual Communication for Modern Media

Design for television, newspapers, advertising, public relations, magazines, film and video. Modules include design and impact of visual imagery and how to apply sound ethical principals.

3 units

MCOM 072. Mass Communication and Society

Mass communication and its relationship to society. Basic theories in mass communication, contemporary issues and milestones in our understanding of media effects.

Prerequisite: Not repeatable for credit if equivalent course has been taken elsewhere.
Repeatable for credit

GE: D3
3 units

UPPER DIVISION**MCOM 100W. Writing Workshop: Mass Communications**

Advanced writing across the media -- advertising, journalism and public relations. Writing and research for an increasingly convergent media with multiple media formats from the Web to print and broadcast, including writing to accompany audio and visual images.

Prerequisite: ENGL 1B (with a grade of C or better); Completion of core GE, satisfaction of Writing Skills Test and upper division standing. Should be taken junior year; required of all advertising, journalism and public relations majors before they reach senior standing. The course will be waived for students receiving a waiver score on the Writing Skills Test.
ABC/No Credit
GE: Z
3 units

MCOM 101. Media Law and Ethics

Principles and case studies of mass communications law and ethics. Constitutional guarantees, libel, privacy, contempt, privilege, copyright, Internet law, FCC and FTC regulatory law.

Prerequisite: Upper division standing.
Repeatable for credit
3 units

MCOM 103. History of American Media

Development of mass communications in the United States from colonial times to the present. Social, economic and political factors which shaped modern media and the impact of mass media on the society.

Prerequisite: Upper division standing.
3 units

MCOM 104. Introduction to Mass Communications Research

Introduction to social science research in mass communications; emphasis on public opinion research, including sampling, survey research design, measurement; also precision journalism, content analysis and external databases; may include class project.

Prerequisite: Upper division standing.
3 units

MCOM 105. Lifestyles, Diversity and the Media

Identifies and evaluates the impact of ethnicity/culture, alternative lifestyles and gender issues on advertising, television, radio, newspapers, magazines and public relations. Examines attitudes, trends and perceptions which help shape mass communication messages.

Prerequisite: Upper division standing.
3 units

MCOM 106. Global Mass Communication

Societal factors behind gathering and disseminating information and entertainment content among mass communication systems of the world. Basic theoretical concepts about international communication and international relations. Impact on economy, politics, culture and governmental communication policies.

Prerequisite: Upper division standing.
3 units

MCOM 111. Internship

Field work for advertising, journalism and public relations majors near end of junior or beginning of senior year, including summer term.

Prerequisite: At least 9 units of major course work in the department (including specified foundation courses) and advisor consent.

Credit / No Credit
3 units

MCOM 136. WWII Press Coverage: Holocaust Concentration Camps and Japanese Internment Camps

Investigation of World War II American media coverage of the Holocaust and Concentration Camps in Europe, and the relocation and internment campus in the USA for Japanese Americans. Review of extent of coverage and placement in media.

3 units

MCOM 139. Specialized Writing

Writing for mass communication with focus on specific topic during the semester. Topics may include specialized writing in public relations, advertising, broadcast and print media.

Prerequisite: JOUR 61A, JOUR 61B, JOUR 61C, upper division standing or instructor consent.
Offered only occasionally.
3 units

MCOM 180. Individual Studies

Advanced independent work in advertising, journalism or public relations for majors only.

Prerequisite: Upper division standing.
Repeatable for credit
Credit / No Credit
1-3 units

MCOM 181A. Special Topics: Professional Development

Seminar/workshop course focusing on a particular professional skill for advertising, journalism, and public relations.

Prerequisite: Upper division standing.
Repeatable for credit
Credit / No Credit
1 unit

GRADUATE**MCOM 210. Media and Social Issues**

Selected readings and group discussions of significant published works dealing with mass communications: history, biography and appraisals; law and ethics of the print and broadcast media, advertising and public relations; public opinion and propaganda.

3 units

MCOM 240. Mass Communications History

Application of historical method in mass communications research; emphasis on source and bibliographical materials. Research projects in media history and development.

3 units

MCOM 250. International Communications

Factors affecting the international flow of news; sociocultural-economic influences on national media systems and concepts of press freedom; comparative mass media systems; the technology of international communications and its implications in developing a world community.

3 units

MCOM 260. Integrated Strategic Communications

Investigates the theory and practice of integrated communications to include promotion, advertising, public relations, direct marketing, and branding. It explains how to integrate these processes of communication and how to develop a comprehensive integrated marketing communications plan.

Prerequisite: Intro course in advertising, public relations or marketing, or instructor consent.

3 units

MCOM 270. Communication Law and Public Policy

A case history approach to the law of communications, including libel, privacy and regulation of broadcasting. Major development and landmark decisions, with emphasis on contemporary ethical and social issues such as free-press/fair trial and new technology.

3 units

MCOM 280. Communication Management

Explores the practice and theory of media management as it applies to: online media, newspapers, magazines, radio stations, television stations, advertising agencies, public relations firms, and corporate communications, and marketing communications. It incorporates leadership, media economics and conflict resolution.

Prerequisite: Instructor consent.

3 units

MCOM 285. New Media Technologies

An examination of new technologies and the ways they influence and converge with traditional media and other communication specialties. Social, political, and regulatory aspects of emerging technologies are discussed.

Prerequisite: Graduate standing.

3 units

MCOM 290. Theory of Mass Communications

Basic theories of communications systems. Functional comparisons of various communications systems in relation to political structure. Communications theories in related disciplines of psychology, sociology, anthropology, economics and political science.

Prerequisite: MCOM 210 or instructor consent.

3 units

MCOM 295. Mass Communications Research

Methodologies of research in mass communications: historical, descriptive and empirical with emphasis upon statistical aspects of data processing and interpretation.

Prerequisite: MCOM 210 and MCOM 220 or instructor consent.

3 units

MCOM 298. Special Studies in Mass Communications

Independent studies in specific areas of mass communications. May be repeated for credit (not in same semester).

Units can be used for Plan B master's degree projects.

Repeatable for credit

Credit / No Credit

1-6 units

MCOM 299. Master's Thesis

Supervised thesis in the field of mass communications. May be repeated for credit (not in same semester).

Prerequisite: Admission to candidacy for the master's degree and approval of thesis proposal.

Repeatable for credit

Credit/No Credit/Report in Progress

3-6 units

PR 193. Special Event Management

The planning and managing of events for the purpose of accomplishing organizational objectives. Emphasis on creative thinking, logistics and practical application of strategies and tactics. A major project is the execution of an actual event.

Prerequisite: PR 099 or instructor consent.

3 units

PR 194. Fund Raising Management

Strategies and tactics of managing fund development programs for non-profits and charitable organizations. The planning and execution of annual giving programs, major gifts, capital campaigns, and fund-raising events.

Prerequisite: PR 099 or instructor consent.

3 units

PR 199. Campaign Planning and Management

Creative problem-solving in strategic planning and program management. Conceive, develop and present an integrated communications plan to a "real-world" client.

Prerequisite: PR 099, PR 190 or PR 191, PR 192, and MCOM 111.

3 units

PUBLIC RELATIONS

LOWER DIVISION**PR 099. Contemporary Public Relations**

Principles, evolution and professional practice of modern public relations. Concepts of planning and executing effective communication strategies, including message design and distribution for any organization.

3 units

UPPER DIVISION**PR 190. Media Writing in the Information Age**

Writing and preparation of public relations materials for distribution to today's print, broadcast, and Internet media. Writing techniques for various media to reach specific audiences.

Prerequisite: JOUR 61A.

3 units

PR 191. Strategic Writing for the Organization

Writing and production of marketing communication materials such as speeches, direct mail, brochures, newsletters, and Web sites, all with an emphasis on computer-aided design and graphics.

Prerequisite: JOUR 061.

3 units

PR 192. Case Studies in Strategic Communication

Case studies focusing on the problems and challenges faced by a variety of organizations. Practical application of creative problem-solving, theory, and research about "real world" situations.

Prerequisite: PR 099.

3 units

Justice Studies

College of Applied Sciences and Arts

MacQuarrie Hall 508
408-924-2940 (Voice)
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www.sjsu.edu/justicestudies

Professors

Janet Johnston
Steven Lee
Mona Lynch, Chair
Richard Perry
Roy R. Roberg

Associate Professors

Cynthia Baroody-Hart
Ann Lucas, Graduate Advisor

Assistant Professors

William Armaline
Mark Correia
Sang Hea Kil
Patrick Timmons

Curricula

- BS, Justice Studies
- BS, Forensic Science, Concentration in Biology
- BS, Forensic Science, Concentration in Chemistry
- Minor, Justice Studies
- Minor, Legal Studies
- MS, Justice Studies

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 49 units are required in the major, plus 3 units of introductory statistics.

All undergraduate majors are required to complete a one semester 4-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 coursework, assists students in applying for graduation and provides advice about career opportunities. Graduate students can contact the graduate advisor, Ann Lucas, for advising (408-924-2914).

Scholarships

University, college and departmental scholarships are available. Seven 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, and the Barton Collins Scholarship. Scholarships are awarded Spring semester each year.

Faculty

Faculty members have degrees in criminal justice, law, jurisprudence, linguistics, biology, history, 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 Requirements45
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 Education2
Requirements in the Major50
JS 010, JS 100W, JS 102, JS 103, JS 104, JS 105, JS 115, JS 118, JS 159 and JS 170 (32); Complete two courses from: JS 107, JS 120, JS 132, JS 136 (6); Justice Studies course electives (12)	
Supporting Requirements3
STAT 095 (or equivalent) or HS 067	
Additional Electives20
A minor is strongly recommended.	
Total Units Required120

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	42
JS 010, JS 016, JS 020, JS 100W, JS 112, JS 113, JS 159, BIOL 002, BIOL 003, BIOL 006, BIOL 115, BIOL 116, BIOL 135 and BIOL 135L	
Electives	6
<i>Other electives may be substituted with advisor approval.</i>	
Complete six units from: ANTH 157, JS 170, BIOL 117, BIOL 124, BIOL 137	
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	36
CHEM 001A, CHEM 001B, CHEM 055, MATH 030, MATH 031, PHYS 070, PHYS 071 and PHYS 072 (33); STAT 095 or HS 067 (3)	
Major Requirements	48
JS 010, JS 016, JS 020, JS 100W, JS 112, JS 113, JS 159, CHEM 112A, CHEM 112B, CHEM 113A, CHEM 113B, CHEM 120S, CHEM 130A, CHEM 145, CHEM 155 and CHEM 160	
Electives	4
<i>Choose among these with prior advisor approval.</i>	
Complete four units from: JS 170, BIOL 002, BIOL 003, BIOL 006, BIOL 115, BIOL 135, BIOL 135L, CHEM 131A, CHEM 145L, MATH 032	
Total Units Required	129

Minor – Justice Studies

	Semester Units
JS 010 (3); Complete two courses from: JS 102, JS 103, JS 104, JS 118 (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 115, JS 122, JS 132, JS 133, MAS 127 or SOCI 151 (3); AFAM 134, HIST 171, MDES 108, POLS 121A or POLS 121B (3); COMM 133, MCOM 101 or BUS 186 (3); JS 103, COMM 147 or POLS 122 (3)	18
Total Units Required	18

MS – Justice Studies

Graduate Coordinator: Dr. Ann Lucas
408-924-2914

Admission

To be considered for admission to the Justice Studies Department, applicants must have a minimum grade point average of 2.5 in the last 60 units of university coursework. Applicants with a GPA lower than 3.2 must also submit GRE scores. Admission decisions will be based on a weighted assessment of the applicants' grade point average, GRE scores if required, coursework and preparation, two letters of recommendation, and personal statement of purpose.

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 10, 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 Studies and Research website at www.sjsu.edu/gradstudies. 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. 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, and having completed 9 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 coursework 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 15 units of core curriculum, plus 15 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 coursework.

Semester Units

All Students 12
JS 201, JS 202, JS 203 and JS 204

Complete Plan A or Plan B 18

With Thesis (Plan A) 18
JS 201, JS 202, JS 203, JS 204, JS 216 and JS 299 (6 units) (21); Three elective courses (9)

Without Thesis (Plan B) 18
JS 201, JS 202, JS 203, JS 204 and JS 216 (15); Five elective courses (15)

Total Units Required 30

Courses**JUSTICE STUDIES****LOWER DIVISION****JS 010. Introduction to Justice Studies**

Historical and philosophical development of the justice system. Description, analysis and evaluation of criminal justice agencies. Relationship between theory and practice.

CAN AJ 2
3 units

JS 014. Concepts of Criminal Law

Historical development of philosophy of law and constitutional provisions, legal definitions, classification of crime, case law, methodology and concepts of criminal law as a social force.

CAN AJ 4
3 units

JS 016. Criminal Evidence and Procedures

Origin, development, philosophy and constitutional basis of evidence; kinds and degrees of evidence and rules governing admissibility; judicial decisions interpreting individual rights and case studies. Interrelationship between the criminal investigator and the evidence admitted at trial.

3 units

JS 020. Principles of Investigation

Principles, methods and investigative techniques to locate, gather, document and disseminate information including the field of corrections. Crime scene perception and recording, sources of information and report writing. Recognition, collection and preservation of evidence.

CAN AJ 8
3 units

UPPER DIVISION**JS 100W. Writing Workshop**

Development of advanced communication skills, both written and oral. Emphasis on writing formats used by criminal justice professionals. A scholarly paper, written in APA format and informed by research, will be required.

Prerequisite: Completion of core GE, ENGL 1B (with a grade of C or better), satisfaction of Writing Skills Test and upper division standing.

ABC/No Credit
GE: Z
3 units

JS 102. Police and Society

A multidisciplinary study of law enforcement from the early 1800's to the present. Focus on significant studies in relation to the role of police and analysis of current models and practices.

Prerequisite: Upper division standing.
3 units

JS 103. Courts and Society

Structure and functions of the court system. Emphasis on the roles of prosecutor, defense attorney, judge, jurors and witnesses. Dynamics of the court process. Examination of current criminal legislation and Supreme Court decisions.

Prerequisite: Upper division standing.
3 units

JS 104. Corrections and Society

Interdisciplinary examination of issues of race, class, gender, ethnicity, economy, and culture as it relates to punishment, the penal process, and social control.

Prerequisite: Upper division standing.
3 units

JS 105. Research Methods in Justice Studies

Introduction to qualitative and quantitative research methods used in Justice Studies. Includes relationship of theory to empirical evidence; logic underlying methods of inquiry; ethics in conducting empirical research; and methodological design, operationalization, and data analysis.

Prerequisite: BUS 90 or STAT 95 or SOCS 15 or SOCI 102 (or equivalent) or instructor consent.
3 units

JS 107. Justice Management and Ethics

The theory and practice of managing justice system agencies, including organizational change and contemporary issues. In-depth examination of ethical challenges in managing justice agencies, and strategies for ensuring ethical practices.

Prerequisite: Upper division standing.
3 units

JS 110. Crisis Intervention, Mediation and Restorative Justice

Review of theory, research and practical skill development in communication and problem resolution strategies using techniques of crisis intervention, mediation and restorative justice in community policing, family court, dependency court and juvenile justice settings.

Prerequisite: Upper division standing.
3 units

JS 111. Special Topics in Law and Justice

Range of law and justice issues and topics may be addressed. Content varies by semester. Topics may include international law and globalization, the struggle for justice, human rights, law, inequality and injustice, and others. May be repeated for credit when content changes for a maximum of 9 units.

Prerequisites: Upper division standing.
Repeatable for credit
3 units

JS 112. Criministics

Fundamental theories of physical evidence practically applied and the legal considerations involved in its recognition, collection, preservation and presentation in court are covered. Topics include securing and recording the crime scene, collecting evidence, maintaining the chain of custody and reconstruction..

Prerequisites: Upper division standing.
3 units

JS 113. Introduction to Forensic Sciences

Scientific concepts, methods, practice and analytical instrumentation utilized by forensic scientists for the recognition, collection, preservation, identification, comparison, analysis and documentation of physical evidence are covered. Topics include evidence interpretation and testimony, professional requirements, standards, training, ethics and quality assurance

Prerequisites: Upper division standing.
Lecture 2 hours/lab 3 hours.
3 units

JS 115. Critical Issues and Ideas in Justice

Interdisciplinary, historical and comparative examination of justice concepts and controversies, including the state's role in promoting justice and perpetuating injustice; legitimate versus illegitimate violence; human rights, stateless persons, and the international community; the relationship between social justice and criminal justice.

Prerequisites: Upper division standing.
4 units

JS 118. Crime and Delinquency Theory

Analysis of the nature and extent of crime, including causation and prevention. Descriptions of offenses, criminal typologies and victim surveys. Evaluation of various control and prevention strategies.

Prerequisites: Upper division standing
3 units

JS 120. Juvenile Justice

History, theory and functions of the juvenile justice system. The legal processes for delinquent minors, status offenders and dependent children, including intake, detention, adjudication and disposition. Current legal issues and debate.

Prerequisites: Upper division standing
3 units

JS 122. Drugs and Society

Examines the physiological effects of psychoactive drugs; history of legal and illegal drug use; causes and rates of use and addiction; drugs in the media; drug-related crime and violence; criminalization, decriminalization, legalization, harm reduction; drug courts; drug treatment.

Prerequisites: Upper division standing.
3 units

JS 132. Race, Gender, Inequality and the Law

History of legal issues and individual and institutional discrimination of women, ethnic/cultural and religious minorities, gays and lesbians and the disabled in education, employment, criminal justice and the family. Affirmative action and reverse discrimination. Solutions for structured inequality in the U.S.

Prerequisites: Completion of core GE, satisfaction of Writing Skills Test ,and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: S
3 units

JS 133. Terrorism, Intelligence, and Security

Examination of terrorist organizations and activities, definitions of terrorism, and social and political consequences of terrorism. Includes policy responses to terrorism, including roles of intelligence and security agencies, and impacts on law, rights and liberties.

Prerequisites: Upper division standing.
3 units

JS 135. White Collar Crime

Growth and development of white collar crime in the United States: crimes at the workplace, computer fraud, swindles, embezzlement, bribery and graft at the corporate and governmental levels.

Prerequisites: Upper division standing.
3 units

JS 136. Family and Community Violence

Examines abusive relationships and responsive community and justice system policy and preventive interventions. Topics include child abuse, neglect, gang and hate crimes, rape, marital violence and elderly abuse.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: S
3 units

JS 159. Senior Seminar: Contemporary Problems

Identification, discussion and analysis of selected problems in justice studies. A major term paper on a selected topic is required.

Prerequisite: Senior standing, JS 105 and JS 100W or instructor consent.

Note: A minimum grade of "C-" in JS 159 is required for graduation.

3 units

JS 170. Internship: Justice Studies

Supervised field work experience in agencies, organizations, and other community settings relevant to Justice Studies, by arrangement. Participation in several group activities and final paper required.

Prerequisite: Upper division standing, Justice Studies major, instructor consent and 2.0 GPA.

4 units are required. Students can take up to 3 additional units as JS electives.

Repeatable for credit
Credit / No Credit
1-7 units

JS 180. Individual Studies

Individual work on special topics by arrangement.

Prerequisite: Upper division standing.
Repeatable for credit
Credit / No Credit
1-3 units

JS 184. Directed Reading

Designed to meet individual needs and interests.

Prerequisite: Upper division standing
Repeatable for credit
Credit / No Credit
1-3 units

JS 186. Professional and Business Ethics

See PHIL 186.

GE: S
3 units

GRADUATE**JS 201. Seminar in Justice and Social Theory**

Examines classic and contemporary theories of justice, including legal, social, economic and criminal justice and their application to current social issues.

Prerequisite: Graduate standing.
3 units

JS 202. Seminar in Justice Research Methods

Examination of research methods applied to solving problems and resolving issues in justice-related agencies, organizations and processes. Focuses on the application of the scientific method to problem-solving and program evaluation.

Prerequisite: STAT 95 or equivalent, JS 105, graduate standing.
3 units

JS 203. Seminar in Justice Evaluation and Policy Analysis

An analysis of justice system policies and procedures with an emphasis on how policies are formulated, evaluated and interpreted.

Prerequisite: STAT 95 (or equivalent), JS 105 and JS 202.
3 units

JS 204. Seminar in Justice Organizations and Behavior

An examination of significant organization and management theories, behavioral processes, and organizational change and development.

3 units

JS 205. Seminar in Law and Courts

Roles of the law in society. Analysis and critique of courts, attorneys, judges and juries; dispute resolution; race, class, sex inequality; law's symbolic functions and unintended consequences; new socio-legal research; and comparative perspectives.

3 units

JS 206. Seminar in Juvenile Justice

Analysis of philosophy, theories, relevant law, research, constitutional issues related to juvenile justice. Structure and purpose of juvenile court proceedings. Minors in criminal and civil court, juvenile corrections, death penalty for juveniles, transfers to adult court, child victims, fetal abuse.

3 units

JS 208. Seminar in Punishment

Examination of a range of penal ideas and practices; includes historical analysis of punishment, overview of theoretical perspectives and empirical social science research on punishment and alternative sanctions and implications for contemporary penal policy.

3 units

JS 209. Seminar in Police and Social Control

Critical examination of democratic policing, including internal and external strategies for control and reform. Emphasis on police role in democracy, policy, culture, performance measures for individuals and organizations, and alternative policing methods and policies.

3 units

JS 210. Seminar in Special Topics

In-depth exploration and analysis of selected justice-related topic. Course will consider relevant theories, issues, and research on the selected topic.

Prerequisite: Graduate standing or instructor consent.
Repeatable for credit
3 units

JS 216. Advanced Seminar in Justice

Identification, analysis and discussion of selected contemporary issues and problems in the justice system.

Prerequisite: 21 units in residency, instructor consent and classified graduate standing.
3 units

JS 270. Justice Practicum

Supervised placement in a justice organization or agency in a position emphasizing analytical and research skills and/or managerial responsibilities. Culminating research or policy paper required.

Prerequisite: Graduate standing and graduate coordinator consent.
Repeatable for credit
Credit / No Credit
1-3 units

JS 297. Research Project

Advanced individual research on selected topic. May be repeated for a maximum of 6 units.

Prerequisite: Admission to candidacy and project advisor consent.
Repeatable for credit
Credit / No Credit
3 units

JS 298. Special Study – Directed Reading

Prerequisite: Admission to candidacy and instructor consent.

Repeatable for credit
Credit / No Credit
1-3 units

JS 299. Master's Thesis

Six units are required to complete the thesis and oral defense of the thesis. Required for Plan A. Must be repeated for a total of 6 semester units.

Prerequisite: Admission to candidacy for the MS degree and thesis chair consent.
Repeatable for credit
Credit/No Credit/Report in Progress
3-6 units

Kinesiology

College of Applied Sciences and Arts

Spartan Complex, SPX 56
408-924-3010

Professors

Gong Chen
Craig J. Cisar
Barbara J. Conry
Nancy L. Meggison
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Shirley H. M. Reekie, Chair
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Associate Professors

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Peggy Plato
Tamar Semerjian

Assistant Professors

KyungMo Han
Jay Johnson
Jinhong Jung
James Kao
Sonja Lilienthal
Matthew A Masucci

Curricula

- BS, Kinesiology
- BS, Kinesiology,
Concentration in Athletic Training
- Minor, Kinesiology
- BS, Kinesiology, Preparation for Teaching
- MA, Kinesiology

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, Teaching Adapted Physical Education and a Concentration in Athletic Training. 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.

Adapted Physical Activity Emphasis 36

Kin 107, Kin 156 and Kin 159 (7); Kin 165 or Kin 166 (3); Kin 170C, Kin 174 and Kin 187 (9); Kin 188, Edse 014A, HRTM 097A, HRTM 113 or HRTM 197 (14); additional units to be determined in consultation with an assigned Kin advisor (3)

Pre-Professional Emphasis 36

Kin 188, Kin 189, Kin 191A, Kin 191B, Kin 194, Kin 195 and Kin 198 (15); upper division electives (6 units must be in Kinesiology) (9); additional units to be determined in consultation with an assigned Kin advisor (12)

Exercise and Fitness Specialist 36

Kin 152, Kin 154A, Kin 154B, Kin 162, Kin 187 and Kin 198 (18); Kin 156, Kin 165 or Kin 166 (3); Kin 188 and Kin 189 (6); additional units to be determined in consultation with an assigned Kin advisor (12)

Movement Science Emphasis	36
KIN 154A (3); KIN 165 or KIN 166 (3); KIN 180 or KIN 184 (3); upper division electives (12); KIN 198 (1-3); additional units to be determined in consultation with an assigned KIN advisor (12-14)	
Societal Studies Emphasis	36
KIN 160, KIN 161 or KIN 164 (6); KIN 167 or KIN 168 (3); KIN 169 and PHIL 012 (6); upper division electives (6); internship/fieldwork (1-3); additional units to be determined in consultation with an assigned KIN advisor (12-14)	
Sport Management Emphasis.....	36
KIN 152 and KIN 153 (6); KIN 160, KIN 161 or KIN 164 (6); KIN 167, KIN 170D, KIN 198 and BUS 160 (12) (a cognate is recommended); additional units to be determined in consultation with an assigned KIN advisor (12)	
Individualized Studies Emphasis	36
Prior to the last 30 units, course of study must be approved by advisor and Undergraduate Coordinator by submission of formal statement of career objectives and rationale for each course proposed. Additional units to be determined in consultation with an assigned KIN advisor.	
Electives	0-3
Total Units Required	120

BS – Kinesiology, Concentration in 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 (22); KIN 162 and KIN 191B (5); 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.

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 Kinesiology 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

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	18

Total Units Required

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.

MA – Kinesiology

Graduate Coordinator: Dr. Theodore Butrym

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 completion of a maximum of 12 prescribed undergraduate units to clear deficiency.
2. A minimum grade point average of 3.0 in the last 60 semester units (or 90 quarter units) of work.

Requirements for Admission to Conditionally Classified Standing

The graduate coordinator may approve admission of a student who: meets requirements for admission to the Graduate Division who has neither a major nor a minor in Kinesiology; or has a grade point average of 2.75 to 2.99 in the last 60 semester units (or 90 quarter units) of work. 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 Studies and Research website at www.sjsu.edu/gradstudies. 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

Option Areas

In consultation with a program advisor, the student identifies an area of study to meet his/her educational objectives. 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
- Sport Sociology

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	
KIN 250 and KIN 251	6
Electives	18
9 units maximum from outside Kinesiology	
Thesis or Project	6
KIN 299	
Plan B (non-thesis)	30
Required Courses	
KIN 250 and KIN 251	6
Electives	21
9 units maximum from outside Kinesiology	
Special Studies	3
KIN 298	
Total Units Required	30

A final oral defense and demonstrated competency in written English are required in both Plans A and B.

Courses

HUMAN PERFORMANCE

LOWER DIVISION

KIN 001. Adapted Physical Activities

Structured individualized physical activities to enhance physical/motor fitness and develop an active, health-oriented lifestyle for students unable to participate in the general activity program.

Repeatable for credit

1 unit

KIN 002A. Beginning Swimming

This course is designed for the non-swimmer and beginning swimmer. It is assumed that all students enrolled in the class have had little or no experience in learning the basic skills of swimming. The course is designed to instruct the student in the basic skills necessary to enable him/her to swim safely in deep water. There are no prerequisites for the course.

1 unit

KIN 002B. Intermediate Swimming

This course is designed to meet the needs of students who have satisfactorily completed the skills involved in beginning swimming.

Prerequisite: Beginning level or its equivalent.

1 unit

KIN 002C. Advanced Swimming

This course is designed to refine and extend the development of advanced skills in swimming.

Prerequisite: Intermediate level or its equivalent.

1 unit

KIN 003. Long Distance Swimming

An advanced level swimming course designed to have a positive effect on cardiovascular fitness and to increase the endurance and speed of each individual.

Prerequisite: Intermediate level or its equivalent.

1 unit

KIN 004. Aquatic Exercise

This course will present various and unique methods of training and conditioning in the aquatic environment.

1 unit

KIN 005. Lifeguard Training

This course is designed to teach the basic concepts involved in "nonsurf" lifeguard training in accordance with the American Red Cross and the criteria set forth by that organization.

1 unit

KIN 008. Skin and SCUBA Diving

Both skin and SCUBA diving skills for enjoyment and to understand dangers connected with the sport. Only one unit can be applied for the physical education graduation requirement.

Prerequisite: KIN 2C (or equivalent).

Lecture 1 hour/activity 3 hours.

2 units

KIN 009A. Beginning Sailing

Basic skills and safety knowledge in small boats for those with little or no sailing experience

Prerequisite: Student must be able to swim 100 yards without stopping, tread water for 5 minutes, and exit from an overturned dinghy. Students will be tested for this in the SPX pool.

1 unit

KIN 009B. Intermediate Sailing

Proficiency in jib and spinnaker sail handling, tuning, mooring/anchoring, marlinspike seamanship (rope and knot work), boat care and maintenance; understanding of sailboat racing; sailing in winds up to 15 knots (17 MPH); includes big boat classes on weekends.

Prerequisite: Beginning level or its equivalent.

1 unit

KIN 010A. Beginning Kayaking

Beginning skills and knowledge for those with little or no experience of flat water kayaking. The emphasis will be on safe operation at all times.

Prerequisite: Students must be able to swim 100 yards without stopping, tread water for 5 minutes, and exit from an overturned kayak. Students will be tested for this in the SPX pool.

1 unit

KIN 013A. Beginning Rugby

This course is designed to familiarize the student with the rules, skills and basic concepts of modern Rugby Union Football. The class will equip the student to be an informed rugby spectator and/or participant.

1 unit

KIN 014A. Beginning Volleyball

This course provides the student with the opportunity to learn and develop the basic rules and skills of volleyball, the 6-6 offense and the defense against the 6-6 offense.

1 unit

KIN 014B. Intermediate Volleyball

This course provides the intermediate student with the opportunity to refine and perfect the basic volleyball skills and to master individual positions when using the 6-2 offense and the defense against the offense.

Prerequisite: Beginning level or its equivalent.

Repeatable for credit

1 unit

KIN 014C. Advanced Volleyball

This course is designed to teach advanced skills, principles and techniques necessary and fundamental to understanding and playing volleyball.

Prerequisite: Intermediate level or its equivalent.

Repeatable for credit

1 unit

KIN 015A. Beginning Basketball

This course is designed to assist students in the development of fundamental skills necessary for effective involvement in playing the game of basketball.

1 unit

KIN 015B. Intermediate Basketball

This course provides the intermediate student with the opportunity to refine and perfect basic basketball skills.

Prerequisite: Beginning level or its equivalent.

Repeatable for credit

1 unit

KIN 018A. Beginning Handball

Designed to develop beginning level handball skills, tactics/strategies, rules, court etiquette, sportsmanship, and game play that will lead to a positive attitude toward handball as a lifetime activity.

1 unit

KIN 019A. Beginning Soccer

This course is designed to introduce students to the game of soccer, and to provide students with the fundamental ability and knowledge needed to enjoy this game as players and as spectators.

1 unit

KIN 019B. Intermediate Soccer

Students will learn intermediate level soccer skills and conditioning, offensive and defensive tactics/strategies, and various soccer playing philosophies from around the world that will lead to developing a positive attitude toward soccer as a lifetime of activity.

Prerequisite: Beginning level or its equivalent.

2 units

KIN 020A. Beginning Badminton

The purpose of this course is to give the student basic understanding of the game of badminton. Students will be given a chance to learn and practice all aspects of the game, which will include strokes, strategy and rules.

1 unit

KIN 020B. Intermediate Badminton

Emphasis on improving basic badminton skills and tactics; learning intermediate skills, tactics and strategies; and playing more effective games.

Prerequisite: Beginning level or its equivalent.

Repeatable for credit

1 unit

KIN 020C. Advanced Badminton

Emphasis on the development of advanced skills, drills, tactics and strategies through practice and games. The class focuses on drills and game play applying a variety of professional rules and etiquette, advanced skills and strategies.

Prerequisite: Intermediate level or its equivalent.

Repeatable for credit

1 unit

KIN 021A. Beginning Tennis

This course is designed to give students a basic understanding of the game of tennis. Students will be given a chance to learn through lecture, demonstration, drilling and match play.

1 unit

KIN 021B. Intermediate Tennis

This course is designed to review the students' understanding of the game of tennis. Students will be given a chance to review and practice all aspects of the game, which will include strokes, strategy and rules.

Prerequisite: Beginning level or its equivalent.

1 unit

KIN 021C. Advanced Tennis

This course deals with the maximizing of tennis skills techniques and high levels of strategy in order to compete successfully in a competitive game situation.

Prerequisite: Intermediate level or its equivalent.

1 unit

KIN 022A. Beginning Racquetball

This course is designed to acquaint the student with the game of racquetball. Content area in this course will include rules, safety, appreciation of the game and introductory skills.

1 unit

KIN 022B. Intermediate Racquetball

This course is designed to assist students in the enhancement of their skill level in the game of racquetball, through involvement in a variety of skills, drills, lead-up games and play situations.

Prerequisite: Beginning level or its equivalent.

1 unit

KIN 023A. Beginning Archery

This course is designed to introduce the student to the basic skills and concepts, provides the opportunity to learn, practice and analyze correct shooting form and to participate in a variety of archery tournaments.

1 unit

KIN 023B. Intermediate Archery

This course builds upon beginning level skills and knowledge and provides the opportunity to shoot a variety of different archery rounds.

Prerequisite: Beginning level or its equivalent.

1 unit

KIN 024A. Beginning Bowling

This course is designed to give students an understanding of the sport of bowling and develop fundamental bowling skills.

1 unit

KIN 024B. Intermediate Bowling

This course is designed to meet the needs of students who have satisfactorily completed the skills in beginning bowling. The course will add more advanced theory and techniques.

Prerequisite: Beginning level or its equivalent.

1 unit

KIN 024C. Advanced Bowling

Designed for students who are skilled bowlers. A brief review of bowling fundamentals and principles will be followed by in depth lectures on application of principles. Drills will be used to improve skills.

Prerequisite: KIN 24B and a bowling average of 150 or better; alternative would be "scratch" league or a low handicap league plus instructor consent.

1 unit

KIN 025A. Beginning Golf

This course is designed for those who have never played golf or who have played very little and have had no basic formal instruction. This course will provide the student with a sound set of fundamentals to prepare for further instruction, if desired.

1 unit

KIN 025B. Intermediate Golf

This course is designed for those who have played some golf but have had little or no formal instruction. The student should finish the class knowing enough golf fundamentals, terminology and rules to play the game and/or proceed on with private, advanced instruction.

Prerequisite: Beginning level or its equivalent.

1 unit

KIN 025C. Advanced Golf

This course is designed for people who might score from the high seventies to the high eighties on a regular basis.

Prerequisite: Intermediate level or its equivalent.

1 unit

KIN 027A. Beginning Table Tennis

Emphasis on learning fundamental table tennis skills, basic tactics, strategies, etiquette, rules, and application to game situations.

1 unit

KIN 027B. Intermediate Table Tennis

Emphasis on improving fundamental skills and learning intermediate/advanced skills, tactics, and strategies for more effective games.

Prerequisite: Beginning level or its equivalent.

1 unit

KIN 028A. Beginning Gymnastics

This course is designed to develop the student's awareness and performance of basic skills in gymnastics.

1 unit

KIN 029. Cardio Kickboxing

Cardio Kickboxing is a noncontact aerobic conditioning activity combining punches, kicks, and traditional aerobic skills. This activity is designed to enhance cardiovascular endurance, muscular strength, and muscular endurance.

1 unit

KIN 030. Pilates

Pilates develops core strength and enhances range of motion in the major joints of the body. This course teaches the fundamentals of the Pilates workout: breathing, relaxation, neutral spine position, key bony landmarks used in alignment cueing, and limb control.

1 unit

KIN 031. Body Sculpting

Increases muscular endurance and improves muscle tone by performing a higher number of repetitions using light to moderate weights. Taught in a group setting with music. Equipment includes: dumbbells, tubing, light weight barbells, and steps.

Repeatable for credit

1 unit

KIN 032. Aerobics

This course is designed to teach the key components of fitness, using aerobics as the mode of exercise. Aerobics can be defined as group exercise to music, using large, continuous, rhythmic movements to elevate the heart rate and produce a training effect, enhancing cardiorespiratory endurance.

Repeatable for credit

1 unit

KIN 033. Advanced Aerobic Activities

A combination of intense activities designed to enhance cardiorespiratory endurance and muscular strength and endurance. Activities include: power aerobics, power step, interval training, resistance/step (aerobelt), jump rope, and boxaerobics.

Prerequisite: KIN 032 or KIN 034 or instructor consent.

Repeatable for credit

1 unit

KIN 034. Step Training

Step training is a low-impact aerobic conditioning activity designed to enhance cardiorespiratory endurance and muscular strength and endurance.

Repeatable for credit

1 unit

KIN 035A. Beginning Weight Training

This course is designed to teach the basic concepts of weight training for muscular strength and endurance. Its goal is to provide students with knowledge about the principles involved in weight training and the health-related components of fitness through a variety of exercises.

1 unit

KIN 035B. Intermediate Weight Training

This course is designed for individuals with prior training experience and involves higher level exercises. Students will be exposed to a wide variety of machine as well as free weight exercises and will then design a program based on individual needs.

Prerequisite: Beginning level or its equivalent.

Repeatable for credit

1 unit

KIN 035C. Advanced Weight Training

This course is designed for students who have had prior class experience in resistive exercise training. Students who have not taken these classes must demonstrate adequate knowledge of lifting technique, terminology and weight room etiquette.

Prerequisite: Intermediate level or its equivalent.

Repeatable for credit
1 unit

KIN 037. Fitness Walking

This course is designed to develop cardiovascular endurance at a low intensity level. Walking at a brisk pace with full arm movement.

Repeatable for credit
1 unit

KIN 038. Beginning Jogging

The purpose of this class is to assist the student in the improvement of his or her cardiovascular fitness through running. This course also seeks to increase the student's knowledge of training methods so that they may develop their own training programs.

1 unit

KIN 040A. Modern Dance I

See DANC 040A.

Repeatable for credit
2 units

KIN 040B. Modern Dance II

See DANC 040B.

Repeatable for credit
2 units

KIN 041A. Ballet I

See DANC 041A.

Repeatable for credit
2 units

KIN 041B. Ballet II

See DANC 041B.

Repeatable for credit
2 units

KIN 042A. Jazz Dance I

See DANC 042A.

Repeatable for credit
2 units

KIN 042B. Jazz Dance II

See DANC 042B.

Repeatable for credit
2 units

KIN 044. Line/Country Western Dance

Basic skills, techniques, and rhythmic progressions of current line and country western dancing.

1 unit

KIN 045A. Beginning Lindy Hop and Night Club Swing

Covers steps, patterns, tricks, technique, and style in Lindy Hop, Jitterbug, Street Swing, Jive and Triple-Time Swing. Will work on "tricks" such as lifts, drops, and dips associated with the Swing era.

1 unit

KIN 046A. Beginning Social Dance

Designed to teach the basic skills and techniques of social dance through participation in selected dances.

Repeatable for credit
1 unit

KIN 046B. Intermediate Social Dance

This course is designed to build on students' current understanding of ballroom dancing and expand their repertoire of dance skills across a wide range of traditional and popular ballroom dances.

Repeatable for credit
1 unit

KIN 048A. Beginning Latin Dance

Designed to enhance students' understanding of Latin dancing and improve fundamental dance skills with a particular focus on the International Style Latin and American Rhythm Style dances such as Rumba and Cha Cha.

Repeatable for credit
1 unit

KIN 048B. Intermediate Latin Dance

Designed to advance students' current understanding of ballroom/social/Latin dancing, expand their repertoire of dance skills, and explore the Latin dances found in International Latin and American Rhythm style social/ballroom dancing.

Prerequisite: Beginning level or its equivalent.
Repeatable for credit

1 unit

KIN 049A. Tap Dance I

See DANC 049A.

Repeatable for credit
1 unit

KIN 049B. Tap Dance II

See DANC 049B.

Repeatable for credit
1 unit

KIN 050. Tai Chi (Non-Combative)

Emphasis on knowledge and skill development of the standard Simplified Tai Chi Form and applications of Tai Chi for life. It is assumed that students enrolled in the class have had little or no experience in Tai Chi.

1 unit

KIN 051A. Beginning Aikido

An introduction to the philosophy, history and basic level training skills in the Japanese-derived martial art of Aikido.

1 unit

KIN 051B. Intermediate Aikido

Intermediate level training in the Japanese-derived martial art of Aikido.

Prerequisite: Beginning level or its equivalent.
1 unit

KIN 052A. Beginning Judo

Judo is a challenging martial art based on the philosophy of using maximum efficiency and maximum effort. This course is designed to teach the fundamental skills and techniques to the student as a recreational activity and/or on a competitive basis.

1 unit

KIN 052B. Intermediate Judo

This course is designed to continue the study of fundamental techniques of Judo from the Beginning Judo course. This course will introduce the student to more advanced judo techniques for the purpose of recreational activity and/or on a competitive basis.

Prerequisite: Beginning level or its equivalent.
1 unit

KIN 052C. Competitive Judo

Prepares students to use Judo techniques in competitive tournaments. The course will offer intermediate and advanced skills (standing, mat and falling techniques) and strategies to improve competitiveness.

Prerequisite: KIN 052A or KIN 052B, and/or instructor consent.
Repeatable for credit
1 unit

KIN 053A. Beginning Karate

This course is designed to teach the beginning concepts of Japanese Karate-do. Its goal is to provide the student with the skills and knowledge necessary for belt promotion and insights into the martial arts.

1 unit

KIN 053B. Intermediate Karate

This course is designed to reinforce basic level skill fundamentals and to introduce intermediate techniques required for higher levels of performance in the art of Karate-do.

Prerequisite: Beginning level or its equivalent.
1 unit

KIN 054A. Beginning Tae Kwon Do

Introduction to history, forms, techniques, practice and etiquette of the martial art of Tae Kwon Do. Techniques include basic prearranged patterns (poomse), basic kicking and combination of kicking, and basic prearranged one-step defenses.

1 unit

KIN 054B. Intermediate Tae Kwon Do

Continuation of beginning level pattern series and defenses. Introduction to tournament rules, regulations and techniques (competition, footwork, blocking, attacking, point scoring, and knowledge of free-sparing), leading to advancement in rank.

Prerequisite: Beginning level or its equivalent.
1 unit

KIN 055A. Beginning Self-Defense

Emphasis on the development of basic self-defense awareness, knowledge, mental strategies, physical skills, self-confidence and hands-on experience.

1 unit

KIN 061A. Beginning Hatha Yoga

In this course the student will learn the correct movements, postures and sequence used in traditional Hatha Yoga.

1 unit

KIN 061B. Intermediate Hatha Yoga

Further exploration of the theories and practices of Hatha Yoga encompassing the second level series of traditional intermediate Hatha Yoga postures, breathing exercises, and relaxation techniques.

Prerequisite: Beginning level or its equivalent.
1 unit

KIN 062A. Beginning Ice Skating

A beginning ice skating course that covers the skills identified by the International Ice Skating Association (IISA).

1 unit

KIN 062B. Intermediate Ice Skating

Extends the basic skills and techniques of beginning ice skating. An introduction to choreography and ice dancing is included.

Prerequisite: Beginning level or its equivalent.
1 unit

KIN 064A. Beginning Mountaineering

Fundamental mountain climbing techniques for a beginning level climber which includes face climbing, chimney climbing, traversing and rappelling.

1 unit

KIN 065A. Beginning Ice Hockey

Basic skills, techniques, strategies and rules of ice hockey. No previous skating is required but the ability to skate is highly recommended.

1 unit

KIN 067. Development of Human Potential

See CHAD 067.

GE: E

3 units

KIN 069. Stress Management: A Multidisciplinary Perspective

The stress process and its relation to health, disease, lifestyle, and the sociocultural environment. Physiological, psychological, sociological, and environmental parameters of stress across the lifespan, emphasizing university resources and stress management strategies to enhance academic, personal, and social development.

GE: E

3 units

KIN 070. Introduction to Kinesiology

Explores the broad spectrum of kinesiology as an academic discipline, fundamental concepts and meaning of movement/physical activity, diversity of humans as moving beings, professional/career options, current issues, personal characteristics/professional responsibilities, Kinesiology at SJSU; initiates professional portfolio.

Lecture 2 hours/activity 2 hours.

Required for KIN majors and minors only.

3 units

KIN 080. Individual Movement Studies

Individual work related to motor performance and activity made by special arrangement.

Activity 2 hours.

Repeatable for credit

Credit / No Credit

1 unit

UPPER DIVISION

KIN 100W. Writing Workshop

Advanced skills in writing. Development of writing style and creation of organized, persuasive and analytical prose. Generalized and specialized forms of writing.

Prerequisite: ENGL 1B (with a grade of C or better); Completion of core GE, satisfaction of Writing Skills Test and upper division standing; KIN 70 for major/minors only or instructor consent.

ABC/No Credit

GE: Z

3 units

KIN 101. Sport in America

The role of sport (recreational and professional) as a social, political and economic institution in American society. Critical examination of contemporary issues affecting sport and sport involvement by diverse cultural groups within American society.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

Not open to KIN majors for major/minor credit.

GE: S

3 units

KIN 105. Water Safety Instructor's Course

Designed to teach the basic concepts, skills and knowledge for successful teaching in the American Red Cross aquatics program. The content and requirements are in accordance with the American Red Cross and the criterion set forth by the organization.

Prerequisite: Minimum age of 18.

Lecture 1 hour/activity 2 hours.

2 units

KIN 106. Advanced SCUBA and Aquatic Technology

Underwater navigation, light salvage, searches, biological sampling, communications, weightless simulations, construction problem solving and lighting.

Prerequisite: NAUI SCUBA certification (or equivalent).

Lecture 1 hour/activity 4 hours.

3 units

KIN 107. Adapted Aquatics

Theories, techniques and practices in the instruction of persons with disabilities as they function in the aquatic environment.

Prerequisite: KIN 70 for majors/minors only or instructor consent.

Activity 2 hours.

1 unit

KIN 149. Child Health and Physical Activity

See CHAD 149.

3 units

KIN 152. Theory of Sport and Fitness Management

Basic theory of sport management. Topics include sport management and organizational skills; sport marketing and sales; sport communication; sport finance, economics, law and governance.

Prerequisite: KIN 70 for majors/minors only or instructor consent.

3 units

KIN 153. Sport Facility and Event Management

Provide students with the skills necessary to effectively manage sport and fitness facilities and events.

Prerequisite: KIN 70 for majors/minors only; KIN 152 for sports management emphasis or instructor consent.

3 units

KIN 154A. Instrumentation in Exercise Physiology and Biomechanics

Familiarity and proficiency with methods and instruments of assessing physiological and biomechanical characteristics of human performance.

Prerequisite: KIN 70, for majors/minors only or instructor consent; KIN 155 and KIN 158 (or equivalent).

Lecture 1 hour/activity 4 hours.

3 units

KIN 154B. ECG Interpretations and Graded Exercise Testing

Theoretical background and practical proficiency in the methods and instruments of electrocardiogram interpretations and graded exercise testing.

Prerequisite: KIN 70 (or equivalent) for majors/minors only or instructor consent; KIN 155.

Lecture 2 hours/activity 2 hours.

3 units

KIN 155. Exercise Physiology

Physiological responses and adaptations of the human organism to physical activity.

Prerequisite: KIN 70 for majors/minors only or instructor consent; BIOL 66; CHEM 30A; approved GE Math Concept course.

Lecture 2 hours/activity 2 hours.

3 units

KIN 156. Introduction to Adapted Physical Activity

Focus on attitude change as well as knowledge, comprehension and application of human movement principles related to individuals with disabling conditions.

Prerequisite: KIN 70 for majors/minors only or instructor consent.

3 units

KIN 158. Biomechanics

Relationship of structural and mechanical principles of the musculoskeletal system to the analysis of human performance.

Prerequisite: KIN 70 for majors/minors only or instructor consent; BIOL 65; approved GE Math Concept Course.

Lecture 2 hours/activity 2 hours.

3 units

KIN 159. Sport and Adapted Activities

Principles of kinesiology for adapting sport and activity for individuals with disabling conditions.

Prerequisite: KIN 70 for majors/minors only or instructor consent.

Lecture 2 hours/activity 2 hours.

3 units

KIN 160. History of Sport and Physical Education

Historical survey of physical education and sport from primitive societies through classical and medieval periods to the nineteenth and twentieth centuries. Development of sport, physical education and recreation in the U.S. and factors affecting their growth.

Prerequisite: KIN 70 for majors/minors only or instructor consent.

3 units

KIN 161. Philosophical Perspectives of Sport

Emphasis on systems of philosophy, aesthetic and moral considerations, metaphysical fitness and contemporary issues. Review of leading human movement theorists.

Prerequisite: KIN 70 for majors/minors only or instructor consent.

3 units

KIN 162. Advanced Fitness Assessment and Exercise Prescription

In-depth study and analysis of the principles and techniques used in the assessment of physical fitness and health as well as the design of conditioning programs and physical activities.

Prerequisite: KIN 70 for majors/minors only for instructor consent; KIN 155.

Lecture 2 hours/Activity 2 hours.

3 units

KIN 163. Physical Fitness and Nutrition

See NUFS 163.

GE: R

3 units

KIN 164. Sociocultural Perspectives

Sociocultural processes of sport and play in contemporary society. The study of phenomena arising out of group relations within the realm of kinesiology.

Prerequisite: KIN 70 for majors/minors only or instructor consent or lower division social science core GE.

Repeatable for credit
3 units

KIN 165. Motor Development

Motor development of the individual from birth to maturity. Emphasis upon motor behavior, needs, capacities and interests.

Prerequisite: KIN 70 for majors/minors only or instructor consent.
3 units

KIN 166. Motor Learning

Concepts, principles and theories of motor learning with application to physical activities.

Prerequisite: KIN 70 for majors/minors only or instructor consent; BIOL 66.
Lecture 2 hours/lab 2 hours.
3 units

KIN 167. Sports Psychology

See PSYC 167.
3 units

KIN 168. Psychology of Coaching

Social, clinical, child, measuring, industrial, personality and organizational psychology and the practical application of the material to coaching.

Prerequisite: KIN 70 for majors/minors only or instructor consent.
3 units

KIN 169. Diversity, Stress and Health

Impact of structured inequalities on stress and health of diverse populations. Analysis of physiological/psychosocial health factors related to diversity, as well as behavioral interventions and social actions that mediate stress and optimize health and social justice.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: S
3 units

KIN 170A. Field Experience Teaching on Campus

Practical experiences for developing teaching competencies in an on-campus or field-based activity.

Prerequisite: KIN 70 for majors/minors only or instructor consent; 35 completed units in major courses.
Repeatable for credit
Credit / No Credit
1 unit

KIN 170B. Field Experience-Teaching

Practical experiences to satisfy certification requirement in off-campus or field-based programs. May be repeated for a maximum of 4 units.

Prerequisite: KIN 70 for majors/minors only or instructor consent. Concurrent enrollment in KIN 172, KIN 173, KIN 178, or KIN 179.
Repeatable for credit
Credit / No Credit
1 unit

KIN 170C. Fieldwork in Adapted Physical Activity

Supervised experiences in adapted physical activity at selected public and private agencies.

Prerequisite: KIN 70 for majors/minors only or instructor consent; KIN 156. Concurrent enrollment in KIN 172 or KIN 178 or KIN 179.
Repeatable for credit
Credit / No Credit
1-3 units

KIN 170D. Fieldwork in Sport Management

Practical experience in a professional work setting while working and observing 100 hours under direct supervision of qualified sport management professionals. Interns assigned a variety of duties and experiences.

Prerequisite: KIN 70, KIN 152, and upper division standing.
Repeatable for credit
Credit / No Credit
1-3 units

KIN 170E. Field Experience Coaching on Campus

Practical experience in on-campus programs for coaching minors. May be repeated once for credit.

Prerequisite: KIN 70 for majors/minors only or instructor consent.
Repeatable for credit
Credit / No Credit
2 units

KIN 170F. Field Experience Coaching off Campus

Practical experience in off-campus programs for coaching minors. May be repeated once for credit.

Prerequisite: KIN 70 for majors/minors only or instructor consent.
Repeatable for credit
Credit / No Credit
2 units

KIN 170G. Field Experience Activity Programs on Campus

Practical experience in on-campus activity programs. Appropriate only for non-teaching concentration areas. Maximum of 3 units may be repeated.

Prerequisite: KIN 70 for majors/minors only or instructor consent.
Repeatable for credit
Credit / No Credit
1 unit

KIN 170H. Field Experience Skin and SCUBA Diving on Campus

Practical experience in skin and SCUBA diving situations. Appropriate for certified SCUBA divers to satisfy certification requirements in on-campus program. Maximum of 4 units may be repeated

Prerequisite: SCUBA Diver Certificate, Life-Saving, first-aid and CPR certification.
Repeatable for credit
Credit / No Credit
1 unit

KIN 171A. Non Traditional Game and Sport Activities

Non traditional and global game and sport activities appropriate for preadolescents and adolescents in instructional settings.

Prerequisite: KIN 70 for majors/minors only or instructor consent; upper division standing.
Lecture/activity 4 hours
3 units

KIN 172. Elementary School Programs, K-6

Philosophy, principles and activities of physical education appropriate for children.

Prerequisite: KIN 70 for majors/minors only or instructor consent; KIN 165 or KIN 173.
Co-requisites: KIN 170B or KIN 170C.
Lecture/activity 4 hours.
3 units

KIN 173. Introduction to Teaching Physical Education

Introduce future physical educators to the teaching profession in today's schools. Includes personal exploration, philosophy of teaching ethics. Standards for the Teaching Profession, legal and business aspects, current issues and trends, development of learning communities, and observation of effective teaching.

Prerequisite: KIN 70 for majors/minors only or instructor consent or concurrent enrollment; KIN 171A.
Co-requisite: KIN 170B.
3 units

KIN 174. Assessment of Psychomotor Function

Basic procedural elements of informal observation, formal performance testing and direct measures of psychomotor function of individuals with disabling conditions.

Prerequisite: KIN 70 for major/minors only or instructor consent.
3 units

KIN 175. Measurement and Evaluation in Kinesiology

Designed to develop an understanding of measurement and evaluation concepts and application relevant to assessment in the psychomotor, cognitive and affective domains. Activities include collection and computer analysis of data.

Prerequisite: KIN 70 for majors/minors only or instructor consent; approved GE Math Concept Course.
Lecture/activity 4 hours.
3 units

KIN 177. Movement Experiences for Children

Physical Education K-6 curricular philosophy and activities appropriate for elementary school personnel; emphasizes the social, emotional, physical and skill development of children in the elementary school setting.

Prerequisite: CD 60 or CD 67.
Lecture 2 hours/activity 2 hours.
3 units

KIN 178. Management Practices for Physical Education Teachers

Examines current practices for managing student behaviors, instructional technology, legal regulations, and physical fitness needs as well as exploring adolescent development.

Prerequisite: KIN 70 for majors/minors only or instructor consent; KIN 172, KIN 171A or concurrent enrollment and upper division standing.
Co-requisite: KIN 170B or KIN 170C.
Lecture 2 hours/lab 2 hours.
3 units

KIN 179. Design and Assessment of Movement Experiences

Integrate concepts from kinesiology, motor learning, motor development to address sequential movement experiences, including qualitative analysis and interactions with performer.

Prerequisite: KIN 70 for majors/minors only or instructor consent; KIN 158, KIN 166 and KIN 178.
Corequisite: KIN 170B or KIN 170C.
Lecture/activity 4 hours
3 units

KIN 180. Individual Studies

Individual work on special topics by arrangement. May be repeated for a total of 4 units.

Prerequisite: KIN 70 for majors/minors only or instructor consent; physical education major or minor; minimum GPA 2.5; advisor consent.
Repeatable for credit
Credit / No Credit
1-4 units

KIN 180C. Individual Studies: Coaching

Individual education in selected coaching situations.

Prerequisite: KIN 70, upper division coaching minor; appropriate concepts and performance course, intermediate level competency or instructor consent.
Repeatable for credit
Credit / No Credit
2 units

KIN 184. Directed Reading

Assigned reading of selected books, journals and papers. Conferences with instructor, seminars, reports (oral and written). May be repeated for a total of 4 units.

Prerequisite: KIN 70 for majors/minors only for; instructor and department chair consent.
Repeatable for credit
Credit / No Credit
1-4 units

KIN 185. Senior Seminar

Problem centered study of perspectives on human beings in motion; a culminating class for students to synthesize their undergraduate preparation, including completion of a professional portfolio and movement project.

Prerequisite: KIN 70 for majors/minors only for instructor consent. 35 units of KIN upper division coursework; major form completed and signed by an advisor, advising manager, and undergraduate coordinator.
3 units

KIN 185H. Senior Seminar – Honors

Examination of a topic of current interest in human performance. Summarized paper to be presented at student seminar.

Prerequisite: KIN 70 for majors/minors only or instructor consent; senior standing, 3.2 or better GPA and 3.5 or better average in major.
3 units

KIN 186. Pharmacology in Sports Medicine

Focuses on the basic pharmacology principles including legislation, administration, pharmacotherapeutics, drug classifications, and drug therapy and testing. Primary emphasis is placed upon pharmacology in the sports medicine arena. This course is accessible only on-line.

Prerequisite: A basic prevention and care of athletic injuries course is highly recommended.
3 units

KIN 187. Exercise Prescription for Diverse Populations

Basic physiological principles applied to the development of conditioning and training for diverse populations, emphasizing the specific requirements and/or demands of various types of physical activity.

Prerequisite: KIN 70 for majors/minors only or instructor consent; KIN 155.
3 units

KIN 188. Prevention and Care of Athletic Injuries

Prevention through safe equipment, facilities and protective strapping. Methods used to aid recovery.

Prerequisite: KIN 70 or instructor consent.
Lecture/activity 4 hours.
2 units

KIN 189. Prevention and Care of Athletic Injuries Laboratory

The laboratory course is designed to provide hands-on experience in the prevention and care of athletic injuries, including preventive and supportive taping techniques, emergency management, and various hands-on experiences related to the prevention of activity related injuries.

Prerequisite: KIN 70, KIN 188 (concurrent enrollment acceptable).
1 unit

KIN 191A. Advanced Assessment of Lower Extremity Injuries

An advanced course designed to develop knowledge and skills in recognition, assessment, and medical referral of athletic injuries to the lower extremity, thoracolumbar spine, posture and gait. Activity sessions are designed to assist in the development of clinical assessment skills.

Prerequisite: KIN 70, KIN 188, KIN 189.
3 units

KIN 191B. Advanced Assessment of Upper Extremity Injuries

An advanced course designed to develop knowledge and skills in recognition, assessment, and medical referral of athletic injuries to the upper extremity, abdomen, thorax, cervical spine, head, and general medical conditions. Activity sessions are designed to develop clinical assessment skills.

Prerequisite: KIN 70; KIN 191A.
Lecture 2 hours/lab 3 hours.
3 units

KIN 193. Organization & Administration in Athletic Training

Theoretical and practical information concerning organization and administration of a modern athletic training program, including managerial styles, personnel, facilities/equipment management, budget, medical records, insurance issues, legal aspects, public relations, and other current topics in athletic training.

Prerequisite: KIN 70 for majors/minors only or instructor consent; KIN 188.
2 units

KIN 194. Therapeutic Exercise

Theoretical and clinical bases for the use of therapeutic exercise in rehabilitation settings; basic biomechanics, indications, contraindications, and proper application procedures of therapeutic exercise in athletic injury rehabilitation.

Prerequisite: KIN 191A and KIN 191B.
Lecture 2 hours/activity 2 hours.
3 units

KIN 195. Therapeutic Modalities

Theoretical and clinical aspects of therapeutic modalities in athletic rehabilitation. Includes the physics and physiological effects, indications and contra-indications, as well as application procedures of various therapeutic modalities.

Prerequisite: KIN 70 for majors/minors only or instructor consent. KIN 188 and upper division standing.
Lecture 2 hours/activity 2 hours.
3 units

KIN 197A. Practicum in Athletic Training I

Introductory level supervised practical experiences at selected athletic training clinical settings.

Prerequisite: BIOL 65, BIOL 66, KIN 188, KIN 189 and 50 hours of observation. Open only to KIN majors.
Repeatable for credit
Credit / No Credit
1 unit

KIN 197B. Practicum in Athletic Training II

Observations and experiences within the profession of athletic training to assist in developing required National Athletic Trainers' Association competencies. Interns supervised on a daily basis by a NATA-certified athletic trainer.

Prerequisite: KIN 197A. Open only to KIN majors.
Repeatable for credit
Credit / No Credit
1 unit

KIN 197C. Practicum in Athletic Training III

Clinical internship in allied health-related situations, e.g., physician's offices, physical therapy sports medicine clinics, etc. Typically off-campus assignment.

Prerequisite: KIN 191A and KIN 191B (concurrent enrollment in KIN 191B is allowed), KIN 197B and professional insurance recommended.
Repeatable for credit
Credit / No Credit
1 unit

KIN 197D. Practicum in Athletic Training IV

Course is designed to provide the student with advanced, diverse, supervised, and practical experiences in the athletic training profession. Selected on-an-off campus clinical settings will be used to assist the student in the development of professional competencies and proficiencies.

Prerequisite: KIN 195, KIN 197C.
Credit / No Credit
1 unit

KIN 198. Internship in Kinesiology

Practical experiences in a professional work setting. Experiences will include exercise testing and evaluation, exercise prescription and program design, leadership and fitness program administration. Maximum of 4 units may be repeated.

Prerequisite: KIN 70 for majors/minors only or Instructor consent.
Repeatable for credit
Credit / No Credit
1-4 units

GRADUATE**KIN 250. Research Methods**

Survey of research methods used in the study of kinesiology. Interpretation of recent research.

Prerequisite: KIN 175 (or equivalent).
3 units

KIN 251. Analysis of Research and Issues in Kinesiology

Designed to develop knowledge and skill to understand and interpret qualitative and quantitative research and engage in critical thinking across physical, biological, behavioral, and sociocultural issues in the kinesiology subdisciplines.

3 units

KIN 255. Advanced Exercise Physiology

Survey and critical evaluation of current concepts and literature regarding physiological regulatory mechanisms of the oxygen transport system and muscle metabolism. Acute and chronic effects of exercise with emphasis placed on physiological limitations.

Prerequisite: KIN 155 (or equivalent).
3 units

KIN 256. Environmental Exercise Physiology

Survey and critical evaluation of current concepts and literature regarding various and environmental (heat, cold, altitude, etc.) conditions as they affect the typical responses to exercise. Acute effects and chronic adaptations examined.

Prerequisite: KIN 155 (or equivalent).
3 units

KIN 257. Biomechanics

Principles and laws of physics and mechanics as applied to analysis of human movement activities. Critical evaluation of current research findings in sport biomechanics.

Prerequisite: KIN 158 (or equivalent).
3 units

KIN 258. Adapted Physical Activity

Continuum of comprehensive service delivery in Adapted Physical Activity. Advanced Pedagogical, Adapted Physical Recreation and Disability Sport areas are addressed.

Prerequisite: KIN 156 (or equivalent).
3 units

KIN 259. Advanced Internship in Adapted Physical Activity

Advanced, supervised practicum for the development of direct service, administration/supervision, in-service training and advocacy/leadership competencies in adapted physical activity.

Prerequisite: BS degree with emphasis in adapted physical education and/or satisfactory completion of specified didactic curriculum.

Repeatable for credit
Credit / No Credit
1-3 units

KIN 260. Philosophy of Sport and Embodiment

Development of a consistent set of basic professional values compatible with individual differences which may serve as a frame of reference for professional behavior.

Prerequisite: KIN 161 (or equivalent).
3 units

KIN 261. Historical Interpretations of Sport and Physical Education

A historical examination of the origins and development of the various sport and physical education forms around the world.

Prerequisite: KIN 160 (or equivalent).
3 units

KIN 263. International Sport and Physical Education

An analysis of the current structure, organization and methods of physical education and sport in selected countries. Social, cultural, political, economic and religious influences.

3 units

KIN 264. Sport Sociology

An in-depth study of the relationship between sport and society. Focus will be on social and cultural factors that affect how Americans play and view sport.

Prerequisite: KIN 164 (or equivalent).
3 units

KIN 265. Advanced Motor Development

Examination of specific theory and research related to the movement changes that occur across the lifespan. Interpretation of recent related research and individually guided investigation of a specific area of concern in motor development.

Prerequisite: KIN 165 (or equivalent).
3 units

KIN 266. Principles and Concepts of Perceptual Motor Learning

Motor behavior and the learning patterns developed in acquiring skill in a motor activity.

Prerequisite: KIN 166 (or equivalent).
3 units

KIN 267. Advanced Sport Psychology

Sport psychology research and its use in field settings. Major theoretical areas (anxiety, motivation, cohesion, etc.) and their application in sport.

Prerequisite: KIN 167 and KIN 168 (or equivalent).
3 units

KIN 268. Evidence Based Research and Practice in Management and Assessment of Injuries to Lower Extremities

Multidisciplinary approach for recognition, initial care, treatment, and rehabilitation used to return athletes to lower extremity pre-injury fitness levels. (First course in two-course series.)

Prerequisite: BIOL 65, BIOL 66, KIN 155, KIN 158 and KIN 188.
2 units

KIN 269. Evidence Based Research and Practice in the Mgmt and Assessment of Injuries to the Upper Extremity

Multidisciplinary approach for recognition, initial care, treatment and rehabilitation used to return an athlete to upper extremity pre-injury fitness levels (second course in two-course series).

Prerequisite: KIN 268.
2 units

KIN 272. Evidence Based Research in the Practice of Therapeutic Exercise

Investigation of the scientific and philosophical bases of therapeutic exercise and therapeutic modalities with reference to the rehabilitation process, and to acquire skills necessary for prudent application of current modalities and techniques.

Prerequisite: KIN 155, KIN 158 and KIN 188 (or equivalent).
3 units

KIN 273. Evidence Based Research in the Practice of Therapeutic Modalities

An advanced course designed to critically evaluate the scientific and philosophical bases of therapeutic modality use. The course is intended to provide the student with the information necessary to perform prudent clinical applications of therapeutic modalities on orthopedic injuries.

2 units

KIN 275. Measurement Theory and Design

Theory and procedures related to the analysis, selection and design of tests in human performance. Emphasis on validity, reliability and statistical interpretation of test data.

Prerequisite: KIN 175 and competency in elementary statistics.
3 units

KIN 280. Advanced Fieldwork in Sport Management

Advanced practical experience in a professional work setting under the direct supervision of qualified sport management professionals. Interns assigned a variety of duties and experiences.

Prerequisite: Graduate standing or instructor consent.
Credit / No Credit
1-3 units

KIN 281. Legal and Ethical Aspects of Sport

Topics include sport and its relationship to the common law of contracts and torts, the statutory law of labor and antitrust, constitutional and civil rights law, communications law and ethics.

Prerequisite: Graduate standing
3 units

KIN 282. Marketing and Social Aspects of Sport

Sport and its relationship to market research designs, strategies, plans, fundraising, consumer behavior, political, sociological and historical parameters.

Prerequisite: Graduate standing or instructor consent.
3 units

KIN 283. Management, Leadership and Communication in Sport

Management, administration, organizational behavior and communication theories, problems and issues in leadership in sport.

Prerequisite: Graduate standing.
3 units

KIN 284. Financial Aspects of Sport

Examines traditional and innovative methods of revenue acquisition available to sport organizations. Current financial challenges, innovative concepts and strategies used in financing sport operation.

Prerequisite: Graduate standing or approval of the instructor.
3 units

KIN 285. Internship in Kinesiology

Advanced practical experience in a professional work setting under direct supervision of qualified professionals. Interns assigned various duties and experiences related to areas of specialization.

Prerequisite: Graduate standing and instructor consent.
Repeatable for credit
Credit / No Credit
1-3 units

KIN 289. Master of Arts Seminar in Kinesiology

The purpose of this seminar course is to offer an intensive, comprehensive focus of a specific topic, and/or theme as it relates to the study of kinesiology.

Prerequisite: Graduate standing or instructor consent.
3 units

KIN 292A. Leadership and Administration in Athletic Training

Current problems and issues related to the athletic training profession. Topics include professional ethics and competency, medicolegal issues, administration of athletic training programs, stress management and drug testing.

1 unit

KIN 292B. Seminar in Sports Medicine II

Current issues related to the athletic training profession. Topics include eating disorders, injury rehabilitation and management. Related topics of medical and scientific nature will be discussed with guest lecturers.

2 units

KIN 293A. Fieldwork in Athletic Training I

Advanced practical experience in athletic training under the direct supervision of qualified sports medicine professionals.

Credit / No Credit

3 units

KIN 293B. Fieldwork in Athletic Training II

Advanced practical experience in athletic training under the direct supervision of qualified sports medicine professionals.

Prerequisite: KIN 293A.

Credit / No Credit

3 units

KIN 293C. Fieldwork in Athletic Training III

Advanced practical experience in athletic training under the direct supervision of qualified sports medicine professionals.

Prerequisite: KIN 293A, KIN 293B

Credit / No Credit

3 units

KIN 293D. Fieldwork in Athletic Training IV

Advanced practical experience in athletic training under the direct supervision of qualified sports medicine professionals.

Prerequisite: KIN 293A, KIN 293B and KIN 293C.

Credit / No Credit

3 units

KIN 298. Special Studies

Advanced individual research and projects.

Prerequisite: KIN 250.

Repeatable for credit

Credit / No Credit

3 units

KIN 299. Master's Thesis or Project

Prerequisite: KIN 250 and admission to candidacy for the master's degree.

Repeatable for credit

Credit/No Credit/Report in Progress

1-6 units

KINESIOLOGY TEACHER EDUCATION**UPPER DIVISION****KNED 184I. Student Teaching for Kinesiology Individualized Interns**

Supervised student teaching in Kinesiology class(es) in the public school where the student is employed as an individualized intern.

Prerequisite: Admission to Single Subject Credential Program; kinesiology advisor and Single Subject Coordinator consent

Repeatable for credit

Credit / No Credit

2-4 units

KNED 184Y. Student Teaching II: Classroom Teaching

Minimum 80-120 class periods of classroom, teaching laboratory or field teaching in appropriate single subjects, grades K-12 and related teaching activities and seminar.

Prerequisite: Joint approval of major and Education departments.

Repeatable for credit

Credit / No Credit

4-6 units

KNED 184Z. Student Teaching III: Classroom Teaching

May be in different subject/school and will be at a different grade level.

See KNED 184Y.

Repeatable for credit

Credit / No Credit

4-6 units

KNED 339. Instructional Materials and Procedures in Physical Education

Application of theories of learning and principles of teaching to the selection of instructional procedures to be used in physical education. Practical experience provided.

Prerequisite: KIN 170B, KIN 172 and KIN 179 and department teacher education approval.

Physical education majors and minors only.

Lecture/activity 4 hours.

3 units



Latin American Studies

College of Humanities and the Arts

Clark Hall 420G
408-924-4626

Associate Professors

Anne Fountain, Coordinator

Curricula

■ Minor, Latin American Studies

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, foreign languages, history, Mexican American studies, philosophy, political science and theatre arts.

Minor – Latin American Studies

	Semester Units
Core Requirements	9
Complete three of: SPAN 102B, ARTH 182A, HIST 162, or other courses substituted by the coordinator from the list of electives	
Electives	9
Complete three courses from: <i>Humanities:</i> ARTH 182A, DANC 102, SPAN 102B, SPAN 140A, SPAN 140B <i>Social Sciences:</i> HIST 162, HIST 163, HIST 164, HIST 166, MAS 105, POLS 146, ANTH 178, GEOG 150 <i>Business:</i> BUS 161A	
Total Units Required	18

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
Deborah Hansen
Ken Haycock
David Loertscher
Linda Main
C. James Schmidt
Judith Weedman

Associate Professors

Geoffrey Liu
Ziming Liu

Assistant Professors

Anthony Bernier
Joni Bodart
Kristen Clark
Charlotte Ford
Dan Fuller

Curricula

- Credential, California Library Media Teacher Services
- MLIS, Master of Library and Information Science

The School of Library and Information Science offers the Master of Library and Information Science degree. In addition, the school provides a program that certifies prospective library media specialists in schools.

The school's programs prepare students to work in all types of libraries and information centers, as well as in a variety of nontraditional information activities. Moreover, the student may prepare to work with children or adults, in public or technical services, in reference or cataloging, and in outreach with minorities or special patron groups. The school's program includes theory, research and practical experience in a mix where the basic philosophy is built on the premise that the school's role is to prepare future information professionals to practice their profession effectively.

The degree is delivered using a variety of different formats: face to face, totally online, and hybrid (mixture of online and face to face).

The school is prepared to offer:

- A Master of Library and Information Science degree
- California Library Media Teacher Services Credential

See the web site for further 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 in to SLIS (School of Library and Information Science):

- At least a B.A. or B.S. degree from a regionally accredited institution in any discipline.
- 3.0 minimum GPA on the most recent 60 semester units (or 90 quarter units) of coursework.
- 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 –
- Provide records showing that the primary language of undergraduate instruction was in English.

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	16
LIBR 200, LIBR 202, LIBR 203, LIBR 204 and LIBR 285 (13); LIBR 289 or LIBR 299 (3)	

Elective Courses	27
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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	
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Total Units Required.....	43
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Other Areas

Courses in such disciplines as computer and information science, mass communication, speech communication and management, may be elected upon recommendation of student's advisor.

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 Studies and Research website at www.sjsu.edu/gradstudies.

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.

Courses

LIBRARY AND INFORMATION SCIENCE

LOWER DIVISION

LIBR 020. Introduction to Computing for Personal Information Management

Introduction to computing for personal information access, use and management including basic computer operations, access to geographically distributed information on the global Internet, electronic communication, word processing and document design, data modeling with spreadsheets, database design and maintenance for information storage and retrieval and information presentation.

3 units

GRADUATE

LIBR 200. Information and Society

Explores the complex social, economic, historical, and technological developments that influence the impact of information on society. The mission, values and ethics of information professionals are also analyzed.

Prerequisite: Demonstrated computer literacy.
3 units

LIBR 202. Information Retrieval

Principles of information retrieval and their application to information systems and services. Emphasizing models of user information-seeking behavior, human information processing and their relationship to retrieval models in information systems.

Prerequisite: Demonstrated computer literacy.
3 units

LIBR 203. Online Social Networking: Technology and Tools

This course introduces students to a variety of new and emerging technologies used in today's online environment. It covers various social networking platforms, content and learning management tools, web conferencing, immersive environments, and other trends in social computing.

Credit / No Credit
1 unit

LIBR 204. Information Organizations and Management

Identifying distinguishing characteristics, culture and relationships of information organizations. Emphasizing theories examining the interaction between human beings and the organizations in which they work.

Prerequisite: Demonstrated computer literacy.
3 units

LIBR 210. Reference and Information Services

Process-oriented examination of how information professionals answer reference questions. Stresses interpersonal skills required for effective question negotiation and sources with which questions are answered.

Prerequisite: LIBR 202.
3 units

LIBR 211. Transfer Course One

Prerequisite: Transfer content for MLIS students who transfer graduate credits. Needs graduate advisor and/or academic advisor approval.

Lecture 2 hours/lab 3 hours.
3 units

LIBR 212. Transfer Course Two

Prerequisite: Transfer Content for MLIS Students who transfer graduate credits. Needs graduate advisor and/or academic advisor approval.
Lecture 2 hours/lab 3 hours.
3 units

LIBR 213. Transfer Course Three

Prerequisite: Transfer content for MLIS students who transfer graduate credits.
Needs graduate advisor and/or academic advisor approval.
Lecture 2 hours/lab 3 hours.
3 units

LIBR 220. Resources and Information Services in Professions and Disciplines

Examination of the nature of resources for, and services to, professions and disciplines. Possible disciplines for study may be law, business and economics, life and/or physical sciences, medical sciences, engineering and computer science, maps, and visual and performing arts. Course is repeatable in the same semester for a maximum of nine units when content changes.

Prerequisite: For Business: LIBR 202, LIBR 204, LIBR 210. For Science/Technology: LIBR 210. For Visual and Performing Arts: LIBR 210.
Repeatable for credit
1-3 units

LIBR 221. Government Information Sources

Study in government publications and databases, their bibliographic organization, use in all types of libraries and information centers, methods of acquiring information from federal, state and local sources; problems of depository and non-depository collections.

Prerequisite: LIBR 210.
3 units

LIBR 228. Advanced Information Resources and Services

Survey of information sources, information transfer processes and research patterns in the humanities, social sciences and science. Use characteristics, interpersonal communication and query analysis will be discussed.

Prerequisite: LIBR 202 and LIBR 210.
3 units

LIBR 229. Practicum/Seminar in Information Services

Opportunity to work in a setting delivering information services. Discussion of encountered problems, current trends and contemporary approaches to information service delivery.

Prerequisite: LIBR 244 or instructor consent.
Credit / No Credit
3 units

LIBR 230. Issues in Academic Libraries

Investigate current issues that impact the functioning of the academic library. Topics include issues related to social and political environments, clientele, services, collections, physical settings, financing, staffing and future trends in the academic library sector.

Prerequisite: LIBR 200 and LIBR 204.
3 units

LIBR 231. Issues in Special Libraries and Information Centers

This course will investigate current issues that impact the functioning of special libraries/information centers. Topics covered will include issues related to social and political environments, clientele, services, collections, physical settings, financing and staffing, and future trends in the special library/information center sector.

Prerequisite: LIBR 200, LIBR 202, LIBR 204.
3 units

LIBR 232. Issues in Public Libraries

This course will investigate current issues that impact the functioning of the public library. Topics covered will include issues related to social and political environments, clientele, services, collections, physical settings, financing and staffing, and future trends in the public library sector.

Prerequisite: LIBR 200, LIBR 202, LIBR 204.
3 units

LIBR 233. School Library Media Centers

The role of the school library media teacher and the school library media program in the educational community. Emphasis on creation of effective learning environments, involvement in the curriculum and teaching process as well as philosophies of service and management.

3 units

LIBR 234. Intellectual Freedom Seminar

Focuses on current intellectual freedom issues and the centrality of intellectual freedom to librarianship.

Prerequisite: LIBR 200, LIBR 204.
3 units

LIBR 240. Information Technology Tools and Applications

Focuses on building practical skills in a variety of networked computer applications. Topics will vary, but will typically include web coding languages and designing web sites.

Prerequisite: LIBR 202.
3 units

LIBR 241. Automated Library Systems

Review of major systems for library automation. Problems associated with the planning, implementation and use of the systems, negotiation of systems acquisition and trends in the field.

3 units

LIBR 242. Database Management

Design and implementation of fully interactive database-driven Web-applications. Includes ODBC and SQL compliant database systems such as Oracle.

Prerequisite: LIBR 200, LIBR 202, LIBR 204, LIBR 240. Recommended: LIBR 246.
Repeatable for credit
3 units

LIBR 243. Systems Analysis

Study of systems as applied to libraries and information centers. Application of methods for studying the means by which libraries deliver information services to users.

3 units

LIBR 244. Online Searching

Techniques of searching and managing online search services. Includes searching strategies, evaluation of database structures, implementation and management of search services and online experience.

Prerequisite: LIBR 202.
3 units

LIBR 245. Advanced Online Searching

Emphasis is on on-line techniques for developing current awareness services.

Prerequisite: LIBR 244.
3 units

LIBR 246. Information Technology Tools and Applications – Advanced

Designing advanced Web applications using technology such as dynamic HTML and XML and Web programming languages such as XSLT, JavaScript, JSP, Perl, PHP, MySQL, and ASP. May be repeated for up to 12 units when content changes.

Prerequisite: LIBR 202.
Repeatable for credit
1-3 units

LIBR 247. Vocabulary Design

Survey of principles and practices used to index information-bearing objects such as documents or images. Includes term assignment, review of existing vocabularies, thesaurus design, metadata structures and automatic and natural language processes.

Prerequisite: LIBR 202.

3 units

LIBR 248. Beginning Cataloging and Classification

Theory and practice of bibliographic control including the study of representative cataloging using AACR2, machine-based representation using MARC formats and other standards, subject analysis and classification using LCSH. Dewey, and LCC with application to books, non-book materials and serials.

Prerequisite: LIBR 202.

3 units

LIBR 249. Advanced Cataloging and Classification

Application of cataloging and organization of information principles to multi- and hyper-media resources. Complex serial publications, evolving standards for representation of non-traditional networked information, and cataloging policy development. Specific focus of the course may vary each time taught.

Prerequisite: LIBR 202, LIBR 248.

3 units

LIBR 250. Design and Implementation of Instructional Strategies for Information Professionals

Examination of concepts of instruction in the use of information technologies, information services and sources. Includes investigation of learning theory and instructional design. Emphasis on application of theory through development of instruction and instructional resources in various media for use in a broad array of institutional environments.

3 units

LIBR 251. Web Usability

Surveys the theory and practice of designing user-centered interfaces in information systems and services. Includes theories of user information seeking, cognition, human-computer interaction, the design process, and application in information systems and the Internet. Emphasis on the design and evaluation of interface.

Prerequisite: LIBR 202.

3 units

LIBR 252A. Information Processing and Management I

An introduction to programming in the Java programming language. Emphasis on techniques necessary for manipulating character strings, sorting and searching algorithms frequently used for information storage and retrieval problems, and fundamental concepts of modern software engineering.

Prerequisite: Computer Literacy.

3 units

LIBR 252B. Information Processing and Management II

Introduction to Object-Oriented Programming (OOP) and Object-Oriented Database Design (OODB) in the Java programming language. Emphasis is on how to apply these concepts and techniques to problem solving in the field of information storage and retrieval.

Prerequisite: LIBR 252A or instructor consent.

3 units

LIBR 253. Natural Language Processing and Automatic Indexing/Abstracting

Introduction to natural language processing and automatic indexing/abstracting with emphasis on text processing. Topics include: semantic dictionary, lexical analysis, word frequency analysis and automatic selection of indexing tokens, term weighting, the vector space model and document representation.

Prerequisite: LIBR 252B or instructor consent.

3 units

LIBR 256. Archives and Manuscripts

An introduction to the theory and practice of managing archival documents, such as personal papers, institutional records, photographs, electronic records and other unpublished material. Topics covered include manuscript and records acquisition and appraisal, arrangement and description, conservation and preservation, research and access.

Prerequisite: LIBR 200, LIBR 202, LIBR 204.

3 units

LIBR 257. Records Management

An introduction to the theories, methodologies and technologies used in managing institutional information and records. Topics include the history of records management, the records' life cycle, record inventory and analysis, classification and filing, retention scheduling and equipment.

Prerequisite: LIBR 200, LIBR 202, LIBR 204.

3 units

LIBR 259. Preservation Management

An introduction to the philosophies and techniques used to preserve manuscript, printed and electronic materials. Examination of different preservation techniques and their attendant philosophies used over the ages, from chaining material to desks to the current practice of digital imaging.

Prerequisite: LIBR 200, LIBR 202, LIBR 204.

3 units

LIBR 260. Resources for Children, Ages 0-6

Survey of children's materials for infants to age six, with emphasis on books for beginning readers, integration of this material into library and school programs, planning and implementation of public relations. Repeatable for credit when content changes.

Repeatable for credit

3 units

LIBR 260A. Programming and Services for Children Ages 0-8

This course examines the importance of programming for children, including parent education programs, story hours, outreach techniques, services with schools, summer reading programs, and program series such as weekly or monthly programs on manga, knitting, book discussions, or homework help.

Prerequisite: Demonstrated computer literacy through completion of required new student online technology workshop.

3 units

LIBR 261. Resources for Children, Ages 6-12

A survey of the books and media available for children 6-12, and of the evaluation, selection, and use of these materials in the contexts of collection development, children's reading interests, informational needs, school curricula, and multicultural library service. Repeatable for credit when content changes.

Repeatable for credit

3 units

LIBR 261A. Programming and Services for Young Adults Ages 9-18

An introduction to developmentally appropriate service with multicultural populations of teenagers in a variety of information settings, including current research and service philosophies; resource awareness, planning and management; information literacy; professionalism; cultural analyses; programming; service threats; and teen spaces.

Prerequisite: Demonstrated computer literacy through completion of required new student online technology workshop.

3 units

LIBR 262. Resources for Young Adults

Materials for adolescents and pre-adolescents and methods for incorporating these materials into library planning. Collection development, needs assessment and programming will be featured. Information services for young adults in a variety of settings will also be addressed. Repeatable for credit when content changes.

Repeatable for credit

3 units

LIBR 262A. Materials for Children Ages 0-4

Survey of children's materials, including "toy" books, picture books, and various media and technology appropriate for this age group, and how they can meet developmental needs. Collection development tools and techniques for these materials will also be included.

Prerequisite: Demonstrated computer literacy through completion of required new student online technology workshop.

3 units

LIBR 263. Materials for Children Ages 5 - 8

Survey of materials in a variety of formats including nonfiction, beginning chapter books, fictional genres, paperback series and electronic resources, and how they can help meet developmental needs. Collection development tools and techniques for this material will also be included.

Prerequisite: Demonstrated computer literacy through completion of required new student online technology workshop.

3 units

LIBR 264. Materials for Tweens Ages 9 -14

Survey of materials in various formats including fiction, nonfiction, movies, CDs, computer games and other materials, and how they can meet the developmental needs of this age group. Collection development tools and techniques for this material will also be included.

Prerequisite: Demonstrated computer literacy through completion of required new student online technology workshop.

3 units

LIBR 265. Materials for Young Adults Ages 15 - 18

This course will allow students to take an in depth look at materials in a variety of formats for teens, including fiction, popular nonfiction, graphic novels, movies, computer games, websites, other media, and determine how they can meet developmental needs.

Prerequisite: Demonstrated computer literacy through completion of required new student online technology workshop.

3 units

LIBR 266. Collection Management

Study of collection management in all types of libraries and information centers. Includes analysis of information needs, criteria for selection, collection use evaluation and resources for collection development.

Prerequisite: LIBR 202, LIBR 204.

3 units

LIBR 267. Services to Youth

Seminar in planning, developing and evaluating youth services in public libraries. Special needs of children and young adults in the public library, liaison with schools, reference services, and collection planning will be featured. Repeatable for credit when content changes.

Prerequisite: LIBR 200, LIBR 204 and LIBR 260 or LIBR 261 or LIBR 262.

Repeatable for credit

1-9 units

LIBR 268. History of Youth Literature

The history of literature for children and teens from its earliest examples to today's current trends, including how childhood has changed over the years, the influence of culture on those changes, and on the materials created for children and teens.

3 units

LIBR 269. Reading and Development

This course will focus on the developmental needs and tasks of children and teens, and how library materials can help meet those needs. A variety of developmental theorists and the value of literature as bibliotherapy will also be examined.

3 units

LIBR 270. Intellectual Freedom and Youth

This course will focus on intellectual freedom issues with youth, the value of youth literature to enhance individuals' lives, the ethics of intellectual freedom, the psychology of censorship and how to combat it, and how to defend materials for youth.

3 units

LIBR 271A. Genres and Topics in Youth Literature

Various topics and genres in literature for children or teens will be examined in depth, such as graphic novels, poetry, fantasy, science fiction, publishing and writing trends, reading motivation techniques, literature in the classroom, and the art of picture books.

Repeatable for credit

3 units

LIBR 272. Authors and Illustrators in Youth Literature

This course will look at selected authors and/or illustrators of youth literature, examining their work, their lives, their motivations, their criticism, and the usefulness of their work.

Repeatable for credit

3 units

LIBR 275. Library Services for Racially and Ethnically Diverse Communities

This course focuses on developing skills for planning, implementing and evaluating programs for addressing the information needs of racially, ethnically and linguistically diverse communities. Reviews the major national, state and local studies.

3 units

LIBR 280. History of Books and Libraries

This class traces the development of the book through its many stages and explores how the creation, use, and storage of information are affected by social and technological change. The development of libraries and librarianship and how they have accommodated themselves to the changing form of the book will also be considered.

Prerequisite: LIBR 200

3 units

LIBR 281. Seminar in Contemporary Issues

Investigation of major contemporary issues within the information profession. Topics range from censorship to the need for a national information policy and change each time the course is offered. A maximum of nine units may be repeated in the same semester when content changes.

Prerequisite: LIBR 200, LIBR 202, LIBR 204.

Repeatable for credit

1-3 units

LIBR 282. Seminar in Library Management

Application of management theory to specific problems. Readings and discussions of the development of effective strategies for planning and implementing organizational change. Content changes each time offered. A maximum of nine units may be repeated in the same semester when content changes.

Prerequisite: LIBR 204.

Repeatable for credit

1-3 units

LIBR 283. Marketing of Information Products and Services

Applications of marketing concepts to library and information services. Market analysis, use surveys, market targeting and introduction of services.

3 units

LIBR 284. Seminar in Archives and Records Management

In-depth study of current issues and practices in archives and records management. The course addresses new areas of research and application such as oral history, sound and visual archives, digitization, archival automation, archival security, genealogy, and more. Course is repeatable for credit for up to 12 units.

Prerequisite: LIBR 200, LIBR 202, LIBR 204. Other prerequisites may be added depending on content.

Repeatable for credit

1-3 units

LIBR 285. Research Methods in Library and Information Science

Selection, formulation and development of problems in library and information science research. Evaluation of published research and in the field.

Prerequisites: LIBR 200, LIBR 202, LIBR 204

1-4 units

LIBR 286. Interpersonal Communication Skills for Librarians

The principles and practice of interpersonal communication; small group and peer relationships.

3 units

LIBR 287. Seminar in Information Science

Current issues and problems in information retrieval as related to concepts and theories of information science. A maximum of nine units may be repeated with different content.

Repeatable for credit

1-3 units

LIBR 289. Advanced Topics in Library and Information Science

Advanced independent examination of selected issues and problems in library and information science with a focus on the integration of theory and practice. Issues and problems addressed will vary each semester.

Credit / No Credit

3 units

LIBR 292. Professional Experience: Projects

Gives students the opportunity to complete a professional project related to the theory and method of Library & Information Science in an information organization or institution, and to gain practical experience in one or more areas of LIS.

Prerequisites: LIBR 200, 202, 204, plus six advanced courses.

Credit / No Credit

3 units

LIBR 293. Introduction to Data Networking

An introduction to computer networking in both Lan and Wan environments with an emphasis on hands-on projects.

Prerequisite: LIBR 200, LIBR 202, LIBR 204. LIBR 240 desirable.

Repeatable for credit

3 units

LIBR 294. Professional Experiences: Internships

Supervised professional experience in an approved public, academic, or special library or other information-based organization.

Prerequisite: LIBR 200, LIBR 202, LIBR 204, and three advanced courses.

Repeatable for credit

Credit / No Credit

2-4 units

LIBR 295. School Library Field Work

Application for assignment must be made during proceeding semester. A supervised professional experience in a minimum of two library media centers: district, elementary, middle, or high school. Emphasis is on observation and guided practice with a credentialed library media teacher.

Prerequisite: LIBR 200, LIBR 202, LIBR 204, LIBR 210, LIBR 233, LIBR 250, LIBR 261, LIBR 262, LIBR 266.

Credit / No Credit

3 units

LIBR 297. Practicum in Instruction for Information Literacy

Experience with instruction in the computer, network and media aspects of information literacy. Course may be repeated in different semester.

Repeatable for credit

Credit / No Credit

3 units

LIBR 298. Special Studies

Advanced individual research and projects related to libraries and information systems. Available only to those students who have completed the major portion of the degree coursework. May be repeated for a maximum of six units of credit.

Prerequisite: LIBR 200, LIBR 202, LIBR 204, instructor consent.

Repeatable for credit

Credit / No Credit

1-3 units

LIBR 299. Thesis

Approved thesis proposal and consent of a faculty advisor required. May be repeated for a maximum of six units of credit.

Prerequisite: LIBR 200, LIBR 202, LIBR 204, LIBR 285.

Repeatable for credit

Credit/No Credit/Report in Progress

3 units

Linguistics and Language Development

College of Humanities and the Arts

Clark Hall 473
408-924-4413

Professors

Rosemary Henze
Thom Huebner
B. Kumaravadivelu
Manjari Ohala, Chair

Associate Professors

Peter Lowenberg
Swathi Vanniarajan

Assistant Professors

Stefan Frazier
Hahn Koo
Scott C. Phillipbaum
Daniel Silverman
Soteria Svorou

Curricula

- BA, Linguistics
- BA, Linguistics, Preparation for Teaching
- Minor, Linguistics
- Certificate, Computational Linguistics
- Certificate, Undergraduate TESOL
- Certificate, Graduate TESOL
- MA, Linguistics
- MA, Teaching English to Speakers of Other Languages (TESOL)

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. The program allows students interested in teaching in high schools the possibility of combining the major with a teacher preparation option (see the section entitled "Teacher Preparation Option"). For more information, contact the LLD credential advisor. 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. Additionally, with its courses in English for Specific Purposes, LLD continues to set the standard in preparing students to develop and deliver English programs in scientific, business, medical and other specialized settings. 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.

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 15 units as part of their degree requirements. Those desiring more information should contact the 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 requirement may contact Studies in American Language for information on TOEFL preparation on the SJSU campus.

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, semantics, cognitive linguistics, educational issues of language minority students, task-based teaching and learning, world Englishes, pedagogical English grammar, English for Specific Purposes, literacy for culturally diverse learners, the psychology of language processing, corpus linguistics and the effects of technology on language and society. 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, and Susan Crandall, an attorney who regularly uses linguistic evidence in the courtroom. 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.

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. Lower division linguistics courses (LING 20 and LING 21) may not be used as part of the 36-unit Requirements in the Major.

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, LING 161, and LING 166. Elective courses (up to 3 units) from other departments such as foreign language, English, communication studies, computer science, psychology, philosophy, anthropology and communication disorders can also be taken with prior advisor approval.

BA – Linguistics, Preparation for Teaching

This major is designed for students interested in teaching English, ESL (English as a Second Language) or ELD (English Language Development) in high school or middle school. The following course work satisfies San José State University's requirements for a BA in Linguistics. This major, in collaboration with the Department of English and Comparative Literature, is approved by the California Commission on Teacher Credentialing (CCTC) as subject matter preparation for a single subject credential in English with an ESL emphasis. Students should consult the advisors in both departments.

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** 21-31

ENGL 056A or ENGL 056B (3); ENGL 068A or ENGL 068B (3); ENGL 109, ENGL 112B and ENGL 125A (9); ENGL 144 or ENGL 145 (3); ENGL 161, ENGL 162, ENGL 163, ENGL 168 or ENGL 169 (3)

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 33**Core Courses** 27

LING 101, LING 111, LING 112, LING 113, LING 114, LING 125, LLD 107 and LLD 108 (24); LLD 100W or ENGL 100W (for English majors) (3)

Electives 6

Choose two from among Ling 161, Ling 166, and either Ling 122 or Ling 129

Electives 8-18

Total Units Required 120

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 Requirements9	
LING 101, LING 111 and LING 112	
Electives6	
Six units of upper division course work, approved by the linguistics advisor	
Total Units Required15	

Language requirement: One year college level foreign language study or equivalent.

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 – 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 linguistics coordinator for advising before beginning this certificate.

To receive the Certificate in Computational Linguistics, students must complete the following 18 units of coursework and fulfill the programming requirement:

	Semester Units
LING 101, LING 111, LING 112, LING 115, LING 124 and LING 16518	
Total Units Required18	

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.

Certificate – Undergraduate TESOL

To receive the undergraduate Certificate in TESOL, students must complete the following eighteen units of required coursework:

	Semester Units
Core Courses12	
LING 101, LLD 107, LLD 108 and LING 166	
Electives6	
Choose two courses with the approval of the TESOL Coordinator	
Total Units Required18	

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

Students may enter the graduate certificate program in either of two ways. They may apply for an MA program and specify on Part B of the application form (Supplemental Application for Post baccalaureate or Graduate Admission) item 11A (1), that the specialty being pursued is the TESOL certificate program; or take the following courses via Open University.

	Semester Units
LING 101, LLD 107, LLD 270, LLD 271, LLD 280 and LLD 28318	
Total Units Required18	

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. 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.

The department also offers two courses in developmental writing for students who have failed the Writing Skills Test (WST). Students with scores in the bottom half of those failing the WST should take LLD 98. Students with scores in the top half of those failing the WST should take LLD 99.

Graduate Programs

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) 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 Internet based version on the TOEFL test). 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). 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).

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 op1 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 Studies and Research website at www.sjsu.edu/gradstudies.

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 committee members.

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	18
LING 113, LING 114, LING 201, LING 202A, LING 203 and LING 213 (or equivalent)	
Additional Courses	12
Plan A (with Thesis)	12
LING 299 (6) and two electives (6)	
Plan B (without Thesis)	12
Four electives (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.

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	24
LLD 250W, LLD 260, LLD 261, LLD 270, LLD 271, LLD 280, LLD 282 and LLD 283	
Additional Courses	6
Plan A (with Thesis)	6
LLD 299	
Plan B (without Thesis)	6
Two electives	
Emphasis in English for Specific Purposes (ESP)	6
LLD 290 (3); LLD 291 or LLD 292 (3)	
Total Units Required	30

Courses

LINGUISTICS

LOWER DIVISION

LING 020. Nature of Language

Introduction to the nature of language as a social institution and practice in observing language structure and use in local speech communities.

GE: D1
3 units

LING 021. Language and Thinking

Exploring systems of language and logic in oral and written discourse, with a focus on the role of shared cultural assumptions, language style and the media of presentation in shaping the form and content of argumentation.

GE: A3
3 units

UPPER DIVISION

LING 101. Introduction to Linguistics

Scientific study of language. Phonetics, phonology, morphology, syntax, semantics, pragmatics, sociolinguistics, psycholinguistics, historical linguistics, language universals and typology.

Prerequisite: Upper division standing.
3 units

LING 111. Introduction to Linguistic Phonetics

Production, recognition and accepted transcription of speech sounds used in languages. Physiological and acoustic analysis of speech.

Prerequisite: LING 101 or instructor consent.
3 units

LING 112. Introduction to Syntax

Introduction to the study of sentence structure: Syntactic constructions; constituent structure; grammatical relations; dependency relations; problems in syntactic analysis; formal systems for describing syntactic structure; typological range of syntactic phenomena.

Prerequisite: LING 101.
3 units

LING 113. Introduction to Phonology

Examination of sound patterns found in the world's languages, their description via traditional phonemic analysis, distinctive feature analysis and rule writing in the format of generative phonology.

Prerequisite: LING 101 and LING 111.
3 units

LING 114. Introduction to Semantics and Discourse

Approaches to meaning, truth conditional semantics, relation of semantics to pragmatics and speech act theory (e.g., presupposition, deixis, adjacency pairs) and text structure (cohesion).

Prerequisite: LING 101 or instructor consent.
3 units

LING 115. Corpus Linguistics

Introduction to the use of large collections of computer-readable text ("corpora") in linguistics. Focus on text processing techniques and quantitative data analysis. Other topics: philosophical foundations; lexical resources; the WWW as corpus; applications to stylistics, language teaching, and sociolinguistics.

Prerequisite: LING 101 or instructor consent.
3 units

LING 122. English as a World Language

A survey of the ways and the purposes which English is used in diverse societies and cultures around the world, including the United States; implications for international and cross-cultural communication.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: V
3 units

LING 123. Sound and Communication

Basic acoustics and nature of sound as applied to the study of vocal communication by humans and other animals. Voice communication as transmission of a speech code via sound.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: R
3 units

LING 124. Computers and Spoken Language

Strategies in man-machine communication, with a focus on speech recognition and speech synthesis. Computer modeling of speech production and perception.

Prerequisite: LING 101, LING 111 or instructor consent.
3 units

LING 125. Introduction to Historical-Comparative Linguistics

Why and how languages change; how linguists go about studying, documenting and explaining such change. Social and phonetic motivations for change. Language families and proto-languages.

Prerequisite: LING 101, LING 111, LING 112, LING 113 or instructor consent.
3 units

LING 129. Culture, Language and Ethnicity in the U.S.

The role of language in the formation of culture and ethnicity in the U.S. Language and culture contact between indigenous, colonial and immigrant peoples.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: S
3 units

LING 161. Psycholinguistics

Psychology of language. Child language acquisition, language disorders, representation of language in the brain, cognitive aspects of linguistic communication, theories of language in linguistics and psychology.

Prerequisite: LING 101.
3 units

LING 162. Introduction to Morphology

Examination of the morphological structure of words; morphological typology; morphemes, morphs and allomorphs; issues in inflectional and derivational morphology; morphophonemics; word syntax; productivity, markedness, iconicity.

Prerequisite: LING 101 or instructor consent.
3 units

LING 165. Computers and Written Language

Computer processing of text using data-driven (statistical) and knowledge-driven (rule-based) methods. Applications including spelling correction, information retrieval, question answering, and machine translation.

Prerequisite: LING 101 and LING 115, or instructor consent.
3 units

LING 166. Sociolinguistics: Cross-Cultural Communication

Relationship between language and society; inter- and intracultural communication; non-verbal communication; language and cognition; language planning.

Prerequisite: LING 101.
3 units

LING 180. Individual Studies

Individual work by arrangement.

Prerequisite: Instructor consent and department chair approval.
Repeatable for credit
Credit / No Credit
1-3 units

GRADUATE

LING 201. Phonology: Theory and Applications

Survey of the theoretical issues in phonology; language universals; notions of markedness and natural rules; psychological reality of phonological constructs. Applications to language teaching, speech synthesis and automatic speech recognition.

Prerequisite: LING 101, LING 111 and LING 113.
3 units

LING 202A. Syntactic Theory

Aspects of syntax and grammatical theory.

Prerequisite: LING 101 and LING 112.
3 units

LING 202B. Current Issues in Syntactic Theory

Aspects of syntax and grammatical theory.

Prerequisite: LING 101, LING 112 and LING 202A.
3 units

LING 203. Semantic Structures

Aspects of meaning and semantic theory.

Prerequisite: LING 101 and LING 114, or instructor consent.
3 units

LING 204. English Sound Patterns

English phonological structure and type of argumentation leading to knowledge of English segmental and prosodic phonology, theoretical issues involved in the analysis of the phonologies of languages and the critical ability to be able to evaluate alternative theories and analyses; relationship of English spelling to pronunciation.

Prerequisite: LING 101, LING 111 and LING 113.
3 units

LING 213. Linguistic Field Methods

Methods in phonological, morphological and syntactic analysis of linguistic data obtained from native-speaker informants.

Prerequisite: LING 101, LING 111, LING 112 and LING 113 (or equivalents).
3 units

LING 240. Language Change

The nature and motivation of language change, including perspectives from neogrammarian, structuralist and transformational-generativist traditions; construction of a comprehensive theory of language change based upon studies of language acquisition, pidgins/creoles and dialectology.

Prerequisite: LING 101, LING 111, LING 112 or instructor consent.
3 units

LING 297. Computers and Language

Natural language processing by computers; elements of syntactic recognition for natural language, language understanding in limited semantic domains, database structure, machine translation, automatic speech recognition and speech synthesis.

Prerequisite: Instructor consent.
3 units

LING 298. Individual Studies

Advanced individual research.

Prerequisite: Instructor consent.
Repeatable for credit
Credit / No Credit
1-4 units

LING 299. Master's Thesis or Project

Thesis or project research.

Repeatable for credit
Credit/No Credit/Report in Progress
1-6 units

LINGUISTICS AND LANGUAGE DEVELOPMENT

LOWER DIVISION

LLD 001. Academic English I

Emphasis on development of English for academic purposes. Integration of reading and writing, supplemented by use of oral language. Required for students scoring 141 and below on the EPT.

Lecture 3 hours/act 2 hours
No graduation credit.
Repeatable for credit
No Degree Credit
5 units

LLD 002. Academic English II

Continued emphasis on the development of English for academic purposes. Integration of reading and writing, supplemented by use of oral language. Required for students scoring between 142 and 148 (inclusive) on the EPT or advancing from LLD 01.

No graduation credit.
Repeatable for credit
No Degree Credit
3 units

LLD 004. Tutorial for Successful Writing

Tutorial consists of a combination of one-on-one interaction with a tutor and facilitated word processing in the computer lab. It is designed to support the development of academic writing skills.

No graduation credit.
Repeatable for credit
No Degree Credit
1 unit

LLD 098. Applied Grammar

Knowledge and application of conventions in English grammar, punctuation and usage. Focus on writing structure and its application. Required for students who fail the Writing Skills Test (WST), with scores in the bottom half of those failing the test.

Prerequisite: Written Communication I.
No graduation credit.
No Degree Credit
3 units

LLD 099. Grammar for Writers

Expository and argumentative writing. Mechanics and composition. Required for students who fail the Writing Skills Test (WST) twice, with scores in the top half of those failing the test.

Prerequisite: Written Communication I.
No graduation credit.
No Degree Credit
3 units

UPPER DIVISION

LLD 100W. Writing Workshop

Advanced composition. Instruction and practice in reading, discussing and writing about issues germane to the student's major field of study.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing.
ABC/No Credit
GE: Z
3 units



LLD 100WB. Writing Workshop for Business Students

Instruction and practice in reading, oral interaction and writing activities germane to the genres of the business world.

Prerequisite: C or better in ENGL 1B or its equivalent, completion of Core GE, satisfaction of Writing Skills Test, and upper division standing.

ABC/No Credit
GE: Z
3 units

LLD 104. Introduction to Second Language Learning and Teaching

A survey of historical and contemporary approaches to language learning and teaching in bilingual and multilingual settings. Methods, materials and assessment for language learners.

Prerequisite: LING 101, LLD 107 or ENGL 103.
3 units

LLD 107. Patterns of English

Description of the sound, word-formation, sentence, semantic and discourse patterns of English. Analysis of contemporary examples of spoken and written English.

Prerequisite: Written Communication I (or equivalent).
3 units

LLD 108. Introduction to Second Language Development, Teaching, and Assessment

Theoretical and practical approaches to how people learn first, second, and foreign languages in bilingual and multilingual educational settings. Methods, materials, and assessment of language development for English language learners K-16.

Prerequisite: LING 101 or ENGL 103 or LLD 107.
3 units

LLD 163. Introduction to Second Language Development

Theoretical and practical considerations in understanding how people learn first, second and foreign languages in various settings; introduces basic techniques in analyzing data from language learners.

Prerequisite: LING 101, ENGL 103 or LLD 107.
3 units

LLD 182. Tutorial Practicum

Directed practical experience in tutoring academic English at the college level.

Prerequisite: LING 101, LLD 107 or ENGL 103.
Repeatable for credit
Credit / No Credit
1 unit

GRADUATE

LLD 230. Seminar in Linguistics/TESOL

Topics in TESOL or linguistic theory.

Prerequisite: Instructor consent.
Repeatable for credit
3 units

LLD 250C. Oral Communication Competence for Multicultural Students

Emphasis on the development of spoken English in academic and professional settings.

No graduation credit.
Repeatable for credit
No Degree Credit
3 units

LLD 250W. Becoming a Professional in Linguistics/TESOL

Course focuses on the research and communication skills needed to become an active and effective member of the professional community in linguistics or TESOL.

Repeatable for credit
3 units

LLD 260. English Structures for Teaching I

The phonological, morphological and syntactic structures of English for pedagogical purposes.

Prerequisite: LING 101 and LLD 107.
3 units

LLD 261. English Structures for Teaching II

The semantic, pragmatic and discourse structure of English for pedagogical purposes.

Prerequisite: LLD 260.
3 units

LLD 270. Second Language Acquisition

Products and processes of child and adult second language acquisition: classroom instruction versus untutored settings; psychological variables; individual differences; interlanguage hypothesis; input and interaction in language development; organization of language systems of bilinguals.

Prerequisite: LING 101.
3 units

LLD 271. Intercultural Communication and Second Language Acquisition

The social and cultural factors that affect first and second language acquisition and use. Understanding how to function in intercultural settings.

Prerequisite: LING 101.
3 units

LLD 280. Methods and Materials for Teaching English to Speakers of Other Languages

A critical approach to evaluating learners' needs, designing curricula, identifying and evaluating materials, and applying appropriate methods and techniques in the ESL classroom.

Prerequisite: LING 101.
3 units

LLD 282. Practicum in Teaching English to Speakers of Other Languages

Directed practical experience in teaching English to speakers of other languages.

Prerequisite: LLD 280.
Credit / No Credit
3 units

LLD 283. Curriculum and Assessment in TESOL

Theories and practices of needs analysis, curriculum design and assessment. Hands-on experience in identifying learner needs, determining instructional objectives, designing curricula/syllabi and constructing appropriate assessment instruments.

Prerequisite: LLD 280 (or equivalent).
3 units

LLD 289. Classroom Techniques for TESOL Professionals

Practical approaches for teachers to maximize learning potential; use of cognitively, affectively and communicatively-based high involvement techniques for TESOL learners.

Prerequisite: LLD 280 (or equivalent).
3 units

LLD 290. Foundations of ESP

Principles and theories involved in the teaching/planning of ESL/EFL courses for vocational, professional, academic or sociocultural purposes. Needs assessment of a local setting.

Prerequisite: LING 101.
3 units

LLD 291. ESP Course Design

Practical application of ESP theory. Curriculum design, methodology, construction and evaluation of an ESP course as reflected in a class designed for an ESP setting in the region.

Prerequisite: LLD 280, LLD 283, LLD 290 or instructor consent.
3 units

LLD 292. Special Topics in ESP

Professional practices and materials for training in English for specific professional, occupational, academic, or sociocultural purposes. Observation and participation in business and workplace training. Development of ESP resources. Case study practice/application.

Prerequisite: LLD 290, LLD 291 or instructor consent.
Repeatable for credit
3 units

LLD 293. Developmental Reading/Writing: Principles and Practices

Cognitive and sociocultural perspectives on reading and writing; contrastive rhetoric; teaching developmental reading and writing.

Prerequisite: LING 101, LLD 107 or ENGL 103.
3 units

LLD 294. Analyzing Classroom Language

Theoretical and practical approaches to observing, analyzing and reflecting on the processes of classroom second/foreign language teaching and learning.

Prerequisite: LLD 260 (or equivalent).
3 units

LLD 295. Cross-Cultural Literacy

Reading and writing in different social and cultural settings: acquisition of literacy, contrastive rhetoric, reading and writing in a second language.

Prerequisite: LING 101, ENGL 103 or LLD 107.
3 units

LLD 297. English in the Global Context

The spread of English as a native and nonnative language around the world. Implications of this spread for linguistics, language planning and TESOL.

Prerequisite: LLD 260 (or equivalent).
3 units

LLD 298. Individual Studies

Advanced individual research.

Prerequisite: Instructor consent.
Repeatable for credit
Credit / No Credit
1-4 units

LLD 299. Master's Thesis or Project

Thesis or project research.

Repeatable for credit
Credit/No Credit/Report in Progress
1-6 units

Marine Science

College of Science

Moss Landing Marine Laboratories

Marine Science Graduate Program
8272 Moss Landing Road
Moss Landing, CA 95039
831-771-4400

Professors

Gregor M. Cailliet, CSU, Fresno MLML
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
Rick Starr, MLML

Other Faculty

Joan M. Parker, MLML
Diana Steller, MLML

Curricula

■ MS, Marine Science

The Moss Landing Marine Laboratories (MLML) hosts and administers 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's 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 strives 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 demonstrated clearly and concisely through an appropriate scientific writing style.

MS – Marine Science

For graduate information contact MLML.

Admission to the Program

Application and admission requirements are available at www.mlml.calstate.edu

Degree Requirements

Graduate students shall successfully complete 30 units of coursework 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's 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 coursework 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 requirement. 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, www.mlml.calstate.edu.

Courses

MARINE SCIENCE

UPPER DIVISION

MS 103. Marine Ecology

Field-oriented introduction to interrelationship between marine and estuarine organisms and their environment; emphasis on quantitative data collection and analysis. Offered fall term.

Prerequisite: Ecology, statistics (or concurrent registration in MS 104), or instructor consent.

Lecture 2 hours; lab/field 6 hours.

4 units

MS 104. Quantitative Marine Science

Mathematical methods for analysis of biological, chemical and physical data from the marine environment; experimental design, parametric and non-parametric statistics. Offered fall term.

Prerequisite: College mathematics.

Course cannot be used to meet 30-unit degree requirement.

Lecture 3 hours/lab 3 hours.

4 units

MS 105. Marine Science Diving

Skin and SCUBA diving course; pool-training culminates in ten ocean dives. Topics covered include diving physics, physiology, diving environments, night diving and research diving. Successful completion gives NAUI and MLML certification. Offered fall and summer terms.

Prerequisite: Certified SCUBA diver (or equivalency as determined by instructor), upper division science major status, thorough physical examination, ability to pass swimming test.

Course cannot be used to meet 30-unit degree requirement.

Lecture 1 hour; lab/field 6 hours.

3 units

MS 112. Marine Turtles, Birds, and Mammals

Systematics, morphology, ecology and biology of marine turtles, birds, and mammals. Course is generally offered alternate fall terms during the odd years.

Prerequisite: Upper division college vertebrate zoology, instructor consent; MS 103 recommended.

Lecture 2 hours lab/field 6 hours.

4 units

MS 113. Marine Ichthyology

A description of the taxonomy, morphology and ecology of marine fishes. Both field and laboratory work concentrate on the structure, function and habits of marine fishes and the ecological interactions of these fishes with their biotic and abiotic surroundings. Offered spring term.

Prerequisite: College zoology (or equivalent) or instructor consent. MS 103 recommended.

Lecture 2 hours lab/field 6 hours.

4 units

MS 124. Marine Invertebrate Zoology I

A field-oriented introduction to the structure, systematics, evolution and life histories of the major marine phyla. Course is generally offered alternate fall terms during the odd years.

Prerequisite: College zoology or instructor consent; MS 103 recommended.

Lecture 2 hours lab/field 6 hours.

4 units

MS 125. Marine Invertebrate Zoology II

A field-oriented introduction to the structure, systematics, evolution and life histories of the minor marine invertebrate phyla. Course is scheduled according to student need and instructor availability.

Prerequisite: College zoology or instructor consent; MS 103 and MS 124 recommended.

Lecture 1 hour; lab/field 6 hours.

3 units

MS 131. Marine Botany

Introduction to the plants of the sea, marshes and dunes, with emphasis on the morphology, taxonomy and natural history of seaweeds and vascular plants. Offered fall term.

Prerequisite: MS 103 recommended, or instructor consent.

Lecture 2 hours/lab 6 hours.

4 units

MS 135. Physiological Ecology of Marine Algae

Understanding the adaptations of marine algae to their environment, including respiration, enzyme activity, and biochemical composition. Hands-on experience in basic electronic instrumentation, chemical separations, optical measurements, culturing methods and radioisotope techniques. Designed for students interested in the biology of seaweeds and phytoplankton. Offered fall term.

Prerequisite: MS 103, 131, 144 or instructor consent.

Lecture 2 hours/lab and field 6 hours.

4 units

MS 141. Geological Oceanography

A study of the structures, physiography and sediments of the sea bottom and shoreline. Offered fall term.

Prerequisite: Instructor consent.

Lecture 2 hours; lab/field 6 hours.

4 units

MS 142. Physical Oceanography

An introduction to the nature and causes of various oceanic motions including currents, waves, tides and mixing, and the physical properties of seawater including transmission of sound and light. Limited use of calculus. Offered fall term.

Prerequisite: College algebra, college physics recommended, or instructor consent.

Lecture 3 hours/lab 3 hours.

4 units

MS 143. Chemical Oceanography

An introduction to the theoretical and practical aspects of the chemistry of the oceans, including major salts, dissolved gases, nutrient ions, carbonate system, transient tracers and shipboard sampling techniques. Offered spring term.

Prerequisite: One year of college chemistry.

Lecture 2 hours/lab 6 hours

4 units

MS 144. Biological Oceanography

The ocean as an ecological system. Emphasis on the complexity of environmental influences on plankton, the transfer of organic matter between trophic levels and nutrient cycles. Laboratory sessions will include methods in sampling, shipboard techniques, identification of the plankton, and current analytical techniques. Offered spring term.

Prerequisite: General biology, general chemistry, or instructor consent.

Lecture 2 hours/lab 6 hours.

4 units

MS 175A. Topics in Marine Sciences (Lecture)

Study of selected area of marine sciences. Subjects vary depending upon demand and availability of instructors. May be repeated for credit when topic changes.

Prerequisite: Instructor consent.
Repeatable for credit
1-4 units

MS 175B. Topics in Marine Sciences (Lab)

Study of selected area of marine sciences. Subjects vary depending upon demand and availability of instructors. May be repeated for credit when topic changes.

Prerequisite: Instructor consent.
Lab 3-12 hours.
Repeatable for credit
Credit / No Credit
1-4 units

MS 175C. Topics in Marine Sciences (Lecture and/or Lab)

Study of selected area of marine sciences. Subjects vary depending on student demand and availability of instructors. May be repeated for credit when topic changes.

Prerequisite: Instructor consent.
Lecture variable hours/lab variable hours.
Repeatable for credit
1-4 units

MS 180. Independent Studies

Faculty-directed study of selected problems; open to undergraduate students with adequate preparation. Offered every term.

Prerequisite: Instructor consent.
Repeatable for credit
Credit / No Credit
1-4 units

GRADUATE**MS 201. Library Research Methods in Marine Science**

Students will gain an advanced understanding of the nature of scientific information. Lectures, discussions and assignments will provide the framework for using and evaluating a variety of information sources in marine and ocean sciences. Strong emphasis will be placed on developing critical skills to interweave knowledge of the history of science into the context of bibliographic tools including the digital realm. Offered spring term.

Prerequisite: Graduate standing; instructor consent.
1 unit

MS 202. Oceanographic Instrumentation

Principles of instruments used in oceanographic research, introduction to electronics, and applications of instrument measurements. Emphasis will vary from CTD profilers, current meters, radiometry and chemical measurement. Offered alternate spring term.

Prerequisite: Graduate standing; MS 141, MS 142 and instructor consent.
Lecture/discussion 2 hours; lab/field 6 hours.
4 units

MS 204. Sampling and Experimental Design

Basic design of experiments and field sampling, including random and systematic sampling, subsampling, survey techniques, single and multifactor experiments using randomized, nested, and blocked experimental designs, and data analyses. Offered spring term.

Prerequisite: Graduate standing; MS 103 and MS 104.
Lecture/discussion 4 hours.
4 units

MS 206. Molecular Biological Techniques

Laboratory-based overview of concepts and techniques for the isolation, characterization, and analysis of DNA and RNA. Covers standard methods (amplification, cloning, and sequencing), and selected specialized techniques (analysis of gene expression), emphasizing marine science applications. Offered spring term.

Prerequisite: Graduate standing; college level genetics, molecular biology, or instructor consent.
Lecture 2 hours/Lab 6 hours.
4 units

MS 208. Scientific Methods

Course is designed to help students develop an understanding of strengths and limitations of various types of scientific reasoning, methodology, and analysis as they relate to scientific progress. Course centers on: round-table discussions of papers and techniques; interactive computer, laboratory, and field learning experiences; and development of critical thinking and writing skills. Offered spring term.

Prerequisite: Graduate standing; instructor consent and approved thesis proposal.
Lecture 3 hours/Lab 3 hours.
4 units

MS 211. Ecology of Marine Turtles, Birds, and Mammals

Community approach to the ecology of marine turtles, birds, and mammals using experimental and sampling methodology. The class will examine the distribution, abundance, trophic ecology, and behavior of turtles, birds, and mammals in Elkhorn Slough and Monterey Bay. Course is generally offered alternate fall terms during even years.

Prerequisite: Graduate standing; MS 103, MS 104 and MS 112 and instructor consent.
Lecture/discussion 2 hours; lab and field 6 hours.
4 units

MS 212. Advanced Topics in Marine Vertebrates

Advanced consideration of the ecology, physiology and phylogeny of fishes, birds, reptiles or mammals, emphasizing current literature and research. Topics and emphasis will vary with term and instructor. May be repeated for credit when topic changes. Offered alternate fall terms.

Prerequisite: Graduate standing; MS 112 or MS 113 and instructor consent.
Lecture, lab and field work variable.
Repeatable for credit
1-4 units

MS 221. Advanced Topics in Marine Invertebrates

Advanced consideration of the ecology, physiology and phylogeny of the various invertebrate phyla emphasizing current literature and research. Topics and emphasis will vary from term to term. May be repeated for credit when topic changes.

Prerequisite: Graduate standing; MS 124 and instructor consent.
Lecture, laboratory and field work variable.
Repeatable for credit
1-4 units

MS 231. Biology of Seaweeds

Discussions on marine macroalgal biology with extensive reading of original literature. Ecologically-oriented individual research projects involving laboratory culture and field experimentation. Offered fall term.

Prerequisite: Graduate standing; MS 131 or instructor consent.
Lecture 2 hours; lab/field work 6 hours.
4 units

MS 233. Advanced Topics in Marine Ecology

Selected topics and current issues in marine ecology. Subjects vary depending on student demand and availability of instructors. May be repeated for credit when topic changes.

Prerequisite: Graduate standing; MS 103 and instructor consent.
Lecture, lab/field work variable.
Repeatable for credit
1-4 units

MS 234. Advanced Biological Oceanography

Experimental techniques in biological oceanography with emphasis on problems important in plankton ecology. An individual research project involving the use of one or more modern analytical tools will be required. Offered fall term.

Prerequisite: Graduate standing; MS 144 or instructor consent.
Lecture 2 hours; lab/field work 6 hours.
4 units

MS 242. Plate Tectonics

Historical background, modern theory and geophysical evidence for continental drift, sea floor spreading and plate tectonics. Examination of the impact of the recent revolution in historical geology. Offered alternate fall terms.

Prerequisite: Graduate standing; MS 141 or instructor consent.
Lecture/discussion 3 hours.
3 units

MS 246. Geology of the Monterey Bay Region

Geology, tectonics, and active naturally occurring processes in the Monterey Bay region and in the Monterey Bay National Marine Sanctuary. The geologic and tectonic history of central California, plate tectonic processes, and representative stratigraphy and geomorphology of the Monterey Bay region. Offered alternate fall terms.

Prerequisite: Graduate standing; instructor consent.
Lecture 2 hours; lab/field work 6 hours.
4 units

MS 248. Marine Benthic Habitat Techniques

Collection and interpretation of geophysical data used to characterize marine benthic habitats. Basic geophysical principals will be reviewed. Application of techniques to identify and characterize marine benthic habitats, including echosounders, multibeam bathymetry and backscatter, sidescan sonar, seismic profiling, and GIS. Offered alternate spring terms during odd years.

Prerequisite: Graduate standing; MS 141 or instructor consent.
Lecture 2 hours; lab/field work 6 hours.
4 units

MS 251. Marine Geochemistry

Geochemical processes in the oceans: thermodynamics of low temperature aqueous reactions, weathering, oxidation-reduction and biologically mediated reactions, processes occurring at the sea floor and air-sea interface. Offered spring term.

Prerequisite: Graduate standing; MS 143, quantitative analysis, one year of calculus or instructor consent.
Lecture 2 hours; lab/field work 6 hours.
4 units

MS 261. Ocean Circulation and Mixing

The mathematical description of the distribution of properties (salinity, density, etc.) in the oceans relating to physical and biochemical processes. Equations of motion, geotropic method, and theory of distribution of variables. Course is offered alternate spring terms during odd years.

Prerequisite: Graduate standing; MS 142 and college physics strongly recommended, or instructor consent.

Lecture 3 hours; lab/field work 3 hours.

4 units

MS 263. Data Analysis Techniques in Oceanography

Introduction to using observational oceanographic data, with hands-on practice in scientific programming for data analysis. Lecture, discussion, and practical experience including the use of existing programs and subroutine libraries. Semester project required. Offered spring term.

Prerequisite: Graduate standing; MS 104, college math and instructor consent.

Lecture 2 hours/lab 6 hours.

4 units

MS 271. Population Biology

Principles involved in the interaction among marine organisms which result in the alteration of population structures. Techniques for assessment and management of animal populations. Offered fall term.

Prerequisite: Graduate standing; MS 103, MS 104 or instructor consent.

Lecture 2 hours; lab/field work 3 hours.

3 units

MS 272. Subtidal Ecology

The ecology of nearshore rocky subtidal populations and communities with emphasis on kelp forests. Lectures and discussions of original literature. Field work with SCUBA including group projects on underwater research techniques and community analysis. Individual research on ecological questions chosen by the student. Knowledge of marine algae, invertebrates and statistics recommended. Offered alternate spring terms during odd years.

Prerequisite: Graduate standing; MS 103, MLML diver certification and marine ecology.

Lecture 2 hours; lab/field work 6 hours.

4 units

MS 273. Marine Environmental Studies of the Gulf of California

An analysis of Gulf of California marine environments. Lectures, readings, intensive field work, and written scientific paper based on original research. Topics vary. Taught with Mexican faculty and students from La Paz, Mexico. Must be able to participate in 2 weeks of field work. Offered spring term.

Prerequisite: Graduate standing; instructor consent.

Lecture 2 hours/lab 6 hours.

4 units

MS 274. Advanced Topics in Oceanography

Study of selected area in oceanography. Subjects vary depending on student demand and availability of instructors. May be repeated when topic changes.

Prerequisite: Graduate standing and instructor consent.

Lecture, lab/field work variable.

Repeatable for credit

1-4 units

MS 280. Scientific Writing

Techniques and strategies of scientific writing used for proposals, journal submissions and abstracts for meetings. Emphasis to develop writing skills by preparing, editing, and rewriting manuscripts. Offered spring term.

Prerequisite: Graduate standing and instructor consent.

Lecture/discussion 3 hours.

3 units

MS 281. Coastal Dynamics

Oceanographic dynamics of coastal environments, with an emphasis on eastern boundary current systems influenced by coastal upwelling. Interactions of physical and geological oceanography and how both affect coastal ecosystem dynamics. Offered spring term.

Prerequisite: Graduate standing and MS 142 or MS 141.

Lecture 2 hours/lab 6 hours

4 units

MS 285. Graduate Seminar in Marine Science

Seminar will be held on topics changing each term. Each student will be required to give at least one seminar. Repeatable for credit. Required enrollment for all MLML graduate students. Offered spring and fall terms.

Prerequisite: Graduate standing and instructor consent.

Lecture 2 hours

Repeatable for credit

2 units

MS 298. Research in the Marine Services

Independent investigations of an advanced nature for the graduate student with adequate preparation.

Prerequisite: Graduate standing and instructor consent.

Lecture, laboratory and field work variable.

1-4 units

MS 299. Master's Thesis

Master's thesis writing component in Marine Science. Required enrollment for all MLML graduate student during their last term. Four units required for degree.

Prerequisite: MLML graduate student standing, approved thesis proposal and instructor consent.

Credit/No Credit/Report in Progress

1-4 units

Mathematics

College of Science

MacQuarrie Hall 308
408-924-5100
www.math.sjsu.edu

Professors

Roger C. Alperin
Joanne Rossi Becker
Marilyn J. Blockus
Natasa Bozovic
Jane M. Day
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
Maurice C. Stanley
Linda B. Valdes
Donald D. Weddington

Associate Professors

Maria Cayco-Gajic
Tim Hsu
Ferdinand Rivera
Cheryl Roddick
Julie Sliva

Assistant Professors

Trisha Bergthold
Martina Bremer
Steven Crunk
Dimitar Grantcharov
Bee Leng Lee
Slobodan Simic

Curricula

- BA, Mathematics
- BA, Mathematics, Preparation for Teaching
- BS, Applied and Computational Mathematics
- Minor, Mathematics
- Minor, Mathematics, For K-8 Teachers
- MS, Mathematics
- MA, Mathematics
- MA, Mathematics, Concentration in Mathematics Education

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 and Computational 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 and the student's ID number. 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.math.sjsu.edu. 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 release form needs to be submitted to the Mathematics Department Office, MH 308, 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 8, 10, 12, 70, 71, 101, 105, 106, 107A, and 107B will not be allowed for students who have received credit in MATH 19, 30, 31, 30P, 32, unless the particular course in question is required for the student's major, minor or credential requirements.

Mathematics Placement Examination

Many students who wish to enroll in MATH 19, MATH 19A, MATH 30 or MATH 30P are required to take the Mathematics Placement Examination. Information and forms are available in the Mathematics Department Office, MH 308, or online at Precalculus and Calculus on the Mathematics Department website: www.math.sjsu.edu.

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.

All upper division math courses except MATH 100W, MATH 101, MATH 105, MATH 106, MATH 107A, MATH 107B and MATH 123 will be included in the major GPA, even if they are not used to satisfy a major requirement. 33 upper division units of mathematics and computer science are required for this degree.

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, CS 046A, CS 049C or CS 049J (2-4); MATH 100W (3)

Semester Units

Requirements in the Major 46-48

Lower Division 13-15

MATH 030 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 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.

All upper division math courses except MATH 100W, MATH 101, MATH 105, MATH 106, MATH 107A, MATH 107B, and MATH 123 will be included in the major GPA, even if they are not used to satisfy a major requirement. 33 upper division units of mathematics are required for this degree.

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, CS 046A, CS 049C or CS 049J (2-4); MATH 100W (3)

Requirements in the Major 46-48

Lower Division 13-15

MATH 030 or MATH 030P (3-5); 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 and Computational Mathematics

This degree is recommended for students who wish to work in the research and development area of industry or pursue a career in statistics. The degree provides a solid foundation in classical applied mathematics. The emphasis in applied mathematics provides a background in computational mathematics, which involves the study of computer solutions to mathematical problems in the sciences and engineering. Students who wish to pursue a career as a statistician can complete the emphasis in statistics. The emphasis in economics, finance and actuarial science prepares students for a career in business (e.g. accounting or management) or finance (e.g. investments, forecasting or financial analyst), as well as a career as an actuarial assistant or an actuary. The degree provides an appropriate background for graduate study in advanced applied mathematics, statistics, numerical analysis or operations research.

All upper division math courses except MATH 100W, MATH 101, MATH 105, MATH 106, MATH 107A, MATH 107B, and MATH 123 will be included in the major GPA, even if they are not used to satisfy a major requirement. 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 42-45

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**Major Requirements** 65-73

Complete one emphasis.

Emphasis in Applied Mathematics .. 68-70

Support for the Major 25
CS 046A and CS 046B (8); PHYS 050 or PHYS 070 (4); PHYS 051 or PHYS 071 (4) (appropriate courses from other Science or Engineering departments may be substituted for the physics courses, with Mathematics Department approval); 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)

Emphasis in Statistics 65-69

Support for the Major 19-21
MATH 050, MATH 109, CS 046A, CS 049C or CS 049J (2-4); 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. (6)

Requirements for the Major 46-48

Lower Division Requirements 13-15
MATH 030 or MATH 030P (3-5); MATH 031, MATH 032 and MATH 042 (10)

Upper Division Requirements 33
MATH 112 and MATH 129A (6); MATH 131A or MATH 132 (3); MATH 133A, MATH 142, MATH 143C, MATH 161A, MATH 161B, MATH 163, MATH 164 and MATH 178 (24)

Emphasis in Economics, Finance and Actuarial Science 68-73**Support for the Major** 22-24

ECON 001A, ECON 001B, ECON 101, ECON 102, BUS 190 and MATH 100W (20); MATH 050, MATH 109, CS 046A, CS 049C or CS 049J (2-4) and

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 0-11

MATH 180H (requires prior approval)

Total Units Required 120

Minor – Mathematics

Semester Units

Lower Division 7-9
MATH 030 or MATH 030P (3-5); MATH 031 (4)

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

Calculus may be substituted for one of the courses with the approval of a mathematics advisor.

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 coursework 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 coursework 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 coursework to make up the deficiency in order to obtain classified status.

Requirements for Admission to Candidacy

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 Studies and Research website at www.sjsu.edu/gradstudies. Students must satisfy the following Mathematics Department requirements:

1. The student must pass two qualifying examinations on fundamental ideas from undergraduate mathematics. The Basic Exam is a written exam on linear algebra and real analysis that students must take in their first year; its topics are those normally covered in MATH 129A and MATH 131A. Students may obtain guidance in preparing for this exam by enrolling in a one-unit seminar (MATH 298).
2. The Specialist Exam is an individualized exam-oral or written at the student's election—that covers the material of two upper-division mathematics courses in one of the following areas: Geometry; Algebra and Number Theory; Linear Algebra and Matrix Theory; Differential Equations; Numerical Analysis; Probability and Statistics; Analysis and Topology; and Combinatorics and Graph Theory. Note: students must pass both the Basic Exam and the Specialist Exam before they may begin formal work on a thesis.
3. The student, with the help of the Graduate Coordinator, selects a thesis or writing project director. With that director's help, the student chooses a topic for the thesis or writing project.
4. The student must complete the Request for Candidacy and Graduate Degree Program form for the Master of Arts 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 – 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.

Complete eighteen units from: MATH 211A, MATH 211B, MATH 213, 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 3

MATH 299 (Plan A) or MATH 298 (Plan B)

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 coursework 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 coursework 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 coursework to make up the deficiency in order to obtain classified status.

Requirements for Admission to Candidacy

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 Studies and Research website at www.sjsu.edu/gradstudies. Students must satisfy the following Mathematics Department requirements:

1. The student must pass two qualifying examinations on fundamental ideas from undergraduate mathematics. The Basic Exam is a written exam on linear algebra and real analysis that students must take in their first year; its topics are those normally covered in MATH 129A and MATH 131A. Students may obtain guidance in preparing for this exam by enrolling in a one-unit seminar (MATH 298).
2. The Specialist Exam is an individualized exam-oral or written at the student's election—that covers the material of two upper-division mathematics courses in one of the following areas: Geometry; Algebra and Number Theory; Linear Algebra and Matrix Theory; Differential Equations; Numerical Analysis; Probability and Statistics; Analysis and Topology; and Combinatorics and Graph Theory. Note: students must pass both the Basic Exam and the Specialist Exam before they may begin formal work on a thesis.
3. The student, with the help of the Graduate Coordinator, selects a thesis or writing project director. With that director's help, the student chooses a topic for the thesis or writing project.
4. The student must complete the Request for Candidacy and Graduate Degree Program form for the Master of Arts 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 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
<i>Complete twelve units from the following, including a one-year sequence.</i>	
Complete twelve units from: MATH 211A, MATH 211B, MATH 213, 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

Requirements are the same as for the MA – Mathematics except that requirement 2 is replaced by: The Specialist Exam 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

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

Degree Requirements

	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 213, 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

Courses

MATHEMATICS

LOWER DIVISION

MATH 003A. Intensive Learning Mathematics I

A first course in a two semester sequence of courses designed to review topics from elementary and intermediate algebra. A credit grade in Math 3A is required to enroll in Math 3B. Four hours discussion per week.

Prerequisite: A score of 370 or less on the ELM exam, or a score of 30 or less on the ELM2 exam.
No credit for graduation.
Repeatable for credit
No Degree Credit
4 units

MATH 003B. Intensive Learning Mathematics II

The second course in a two semester sequence of courses designed to review topics from elementary and intermediate algebra. A credit grade in Math 3A is required to enroll in Math 3B. Completion of 8 units of Math 3A and Math 3B with a credit grade indicates satisfaction of the ELM requirement. Four hours discussion per week.

Prerequisite: CR grade in MATH 3A.
No credit for graduation.
Repeatable for credit
No Degree Credit
4 units

MATH 003R. Entry Level Mathematics Review

Review of topics from elementary and intermediate algebra. Completion of this course with a credit grade indicates satisfaction of the ELM requirement.

No credit for graduation.
No Degree Credit
5 units

MATH 006A. Entry Level Mathematics I

A first course in a two semester sequence of courses designed to review topics from elementary and intermediate algebra. A credit grade is required to enroll in Math 6B.

Prerequisite: A score from 380 through 450 on the ELM exam, or a score from 31 through 40 on the ELM2 exam.
Lecture 2 hours/act 2 hours.
No credit for graduation.
Repeatable for credit
No Degree Credit
3 units

MATH 006B. Entry Level Mathematics II

The second course in a two semester sequence of courses designed to review topics from elementary and intermediate algebra. A credit grade in Math 6A is required to enroll in Math 6B. Completion of Math 6B with a credit grade indicates satisfaction of the ELM requirement.

Prerequisite: A credit grade in MATH 6A.
Lecture 2 hours/act 2 hours.
No credit for graduation.
Repeatable for credit
No Degree Credit
3 units

MATH 006D. Entry Level Mathematics

A review of topics from elementary and intermediate algebra. Completion of this course with a credit grade indicates satisfaction of the ELM requirement.

Prerequisite: A score from 500 through 540 on the ELM exam, or a score from 46 through 49 on the ELM2 exam.
Discussion 5 hours/week.
No credit for graduation.
Repeatable for credit
No Degree Credit
5 units

MATH 006L. Entry Level Mathematics

A review of topics from elementary and intermediate algebra. Completion of this course with a credit grade indicates satisfaction of the ELM exam.

Prerequisite: A score from 460 through 540 on the ELM exam or a score from 41 through 49 on the ELM2 exam.
Lecture 3 hours/lab 2 hours.
No credit for graduation.
Repeatable for credit
No Degree Credit
5 units

MATH 008. College Algebra and Trigonometry

Topics in college algebra. Trigonometric functions, trigonometric identities, solution of trigonometric equations and applications of trigonometry.

Prerequisite: Satisfaction of ELM requirement.
GE: B4
3 units

MATH 010. Mathematics for General Education

Topics from: methods of proof, problem solving, trigonometry, probability, statistics, applications to scheduling and apportionment, population studies, consumer math, theory of games, polyhedra, networks, graph theory, linear programming.

Prerequisite: Satisfaction of ELM requirement.
GE: B4
3 units

MATH 012. Number Systems

Structure of the real number system, numeration systems, elementary number theory, and problem-solving techniques; technology integrated throughout the course.

Prerequisite: Two years of high school algebra; one year of high school geometry; satisfaction of ELM requirement.
GE: B4
3 units

MATH 019. Precalculus

Preparation for calculus: polynomial, rational, exponential, logarithmic and trigonometric functions; analytic geometry.

Prerequisite: Satisfaction of ELM requirement; Satisfactory score on the Mathematics Placement Exam (MPE), or a grade of "C-" or higher in MATH 8, or a score of 550 or higher on the Mathematics Section of the SAT, or a score of 23 or higher on the ACT. Concurrent enrollment in MATH 19W Precalculus Workshop required except for students receiving a score of 23 or higher on the MPE or a "B" or higher in MATH 8.
ABC/No Credit
GE: B4
5 units

MATH 019A. Precalculus with Activity

Preparation for Calculus: polynomial, rational, exponential, logarithmic and trigonometric functions; analytic geometry.

Prerequisite: Satisfaction of ELM requirement; Satisfactory score on the Mathematics Placement Exam, or a grade of "C-" or higher in MATH 8, or a score of 550 or higher on the Mathematics Section of the SAT, or a score of 23 or higher on the ACT. Lecture 3 hours/activity 4 hours.

ABC/No Credit
5 units

MATH 019W. Precalculus Workshop

A course designed to help all students excel in Math 19. Students work in groups on challenging problems to help them understand precalculus concepts more deeply and lay the groundwork for success in future math courses.

Prerequisite: Concurrent enrollment in Math 19 required.
Credit / No Credit
1 unit

MATH 030. Calculus I

Introduction to calculus including limits, continuity, differentiation, applications and introduction to integration. Graphical, algebraic and numerical methods of solving problems.

Prerequisite: Satisfaction of ELM requirement; Satisfactory score on the Mathematics Placement Exam, or MATH 19 or MATH 19A (with a grade of "B" or better to waive the placement exam). CAN MATH18
GE: B4
3 units

MATH 030P. Calculus I with Precalculus

Selected topics in precalculus. Introduction to calculus including limits, continuity, differentiation, applications, and introduction to integration. Graphical, algebraic and numerical methods of solving problems.

Prerequisite: Satisfaction of ELM requirement; Satisfactory score on the Mathematics Placement Exam, or MATH 19 or MATH 19A (with a grade of "C" or better). GE: B4
5 units

MATH 031. Calculus II

Definite and indefinite integration with applications. Sequences and series. Graphical, algebraic and numerical methods of solving problems.

Prerequisite: MATH 30 or MATH 30P (with a grade of "C-" or better). CAN MATH20
4 units

MATH 032. Calculus III

Functions of more than one variable, partial derivatives, multiple integrals and vector calculus. Graphical, algebraic and numerical methods of solving problems.

Prerequisite: MATH 31 (with a grade of "C" or better). CAN MATH22
3 units

MATH 042. Discrete Mathematics

Sets, logic, methods of proof including mathematical induction, functions, relations, elementary combinatorics, probability, Boolean algebras.

Prerequisite: MATH 19 or MATH 19A (with a grade of "C" or better) or eligibility for Math 30 or 30P.
3 units

MATH 050. Scientific Computing I

See METR 050.
2 units

MATH 070. Finite Mathematics

Systems of linear equations and inequalities, matrices, linear programming, set theory and probability theory, applications to business and to social sciences.

Prerequisite: Satisfaction of ELM requirement.
CAN MATH12
GE: B4
3 units

MATH 071. Calculus for Business and Aviation

Functions and graphs, limits, continuity, differentiation, integration, partial differentiation. Emphasis on business and economics applications.

Prerequisite: Knowledge of intermediate algebra; satisfaction of ELM requirement.
GE: B4
3 units

UPPER DIVISION**MATH 100W. Technical Writing Workshop**

Advanced writing through preparation of technical reports and presentations. Improving skills for writing subject-related reports, project proposals and personal resumes through practice and evaluation. Course assignments will be related to issues concerning careers in mathematics and mathematics education.

Prerequisite: ENGL 1B (with a grade of "C" or better); Completion of core GE; satisfaction of Writing Skills Test; upper division standing.
ABC/No Credit
GE: Z
3 units

MATH 101. Problem Solving for Teachers

Problem solving involving elementary number theory, algebra, geometry, logic, measurement, probability and statistics. Selected problems explored and extended across content strands. Various instructional methods and assessment alternatives modeled. Designed specifically for teachers of mathematics, grades K-8.

Prerequisite: MATH 106 (with a grade of "C" or better) or instructor consent.
3 units

MATH 104. History of Mathematics

Mathematical development from earliest times to the twentieth century.

Prerequisite: MATH 42 and MATH 115 (with a grade of "C" or better in each), or instructor consent.
3 units

MATH 105. Concepts in Mathematics, Probability and Statistics

Introduction to functions and algebraic reasoning, introduction to probability, data, graphs, statistics, problem solving; technology integrated throughout the course.

Prerequisite: Two years of high school algebra, one year of high school geometry, MATH 12 with a "C" or better.
3 units

MATH 106. Intuitive Geometry

Introductory geometry, measurement, inductive and deductive reasoning, introduction to transformations, and problem-solving techniques; technology integrated throughout the course.

Prerequisite: MATH 12 and MATH 105 (with grades of "C" or better); two years of high school algebra; one year of high school geometry.
3 units

MATH 107A. Explorations in Algebra

Comprehensive view of school algebra primarily for the mathematical preparation of teachers. The computer will be used to generate examples, investigate relationships, explore algorithms and solve problems. Functions and relations used as a unifying theme throughout.

Prerequisite: MATH 106 (with a grade of "C" or better), or instructor consent.
3 units

MATH 107B. Explorations in Geometry

Comprehensive view of elementary geometry primarily for the mathematical preparation of teachers. The computer will be used to investigate two- and three-dimensional patterns, measurement and parallelism. Transformational approach to congruence and similarity. Nature of inductive reasoning and deductive proof.

Prerequisite: MATH 106 (with a grade of "C" or better), or instructor consent.
3 units

MATH 108. Introduction to Abstract Mathematics and Proofs

The purpose of this course is to develop students' mathematical maturity and skill with proofs. Material covered will include logic; set theory including functions, relations, and cardinality; the real number system, including the completeness axiom; and selected topics.

Prerequisite: MATH 31 and MATH 42 (with a grade of "C" or better in each) or instructor consent.
3 units

MATH 109. Mathematical Software

Use of mathematical software in selected fields of mathematics such as calculus, multivariable calculus, differential equations, combinatorics, statistics, and linear algebra. A programming project will be required.

Prerequisite: MATH 32 and either MATH 123 or MATH 129A (with a C- or better in each course), or instructor consent.
3 units

MATH 110L. Mathematics Computing Laboratory

Programming projects related to mathematics courses. Required for use of department labs.

Corequisite: Any Math course and instructor consent.
Does not count towards major or minor requirements.
Repeatable for credit
Credit / No Credit
1 unit

MATH 112. Vector Calculus

Algebra and calculus of vectors, metric structure of Euclidean space, transformations, vector fields, integration and applications.

Prerequisite: MATH 32 (with a grade of "C" or better) or instructor consent.
3 units

MATH 113. Differential Geometry

Properties of curves and surfaces, Frenet-Serret formulas and the fundamental forms. Study of curves and surfaces in the small by means of differential calculus.

Prerequisite: MATH 32 and MATH 129A (with a grade of "C" or better in each) or instructor consent.
Offered only occasionally.
3 units

MATH 115. Modern Geometry and Transformations

Synthetic and analytic theory of projective transformations, similarities, Euclidian motions, inversive geometry and an introduction to non-Euclidean geometry.

Prerequisite: MATH 31 (with a grade of "C-" or better) or instructor consent.

3 units

MATH 123. Differential Equations and Linear Algebra

Matrices, determinants, systems of linear equations, vector geometry, linear transformations, eigenvalues and eigenvectors, diagonalization, first order differential equations, linear systems of differential equations, higher order differential equations, Laplace transforms.

Prerequisite: Math 31 (with a grade of "C-" or better) or instructor consent.

3 units

MATH 126. Theory of Numbers

Divisibility, prime numbers, congruences of first and higher degrees, theorems of Fermat, Euler and Wilson. Quadratic residues.

Prerequisite: MATH 31 and MATH 42 (with a grade of "C-" or better in each) or instructor consent.

3 units

MATH 128A. Abstract Algebra I

Group theory: permutation groups, abelian groups, morphism theorems, finite groups. Introduction to rings and fields.

Prerequisite: MATH 108 and MATH 129A (with a grade of "C-" or better in each) or instructor consent.

3 units

MATH 128B. Abstract Algebra II

Emphasis on rings, integral domains, fields, field extensions, Galois theory.

Prerequisite: MATH 128A (with a grade of "C-" or better) or instructor consent.

3 units

MATH 129A. Linear Algebra I

Matrices, systems of linear equations, vector geometry, matrix transformations, determinants, eigenvectors and eigenvalues, orthogonality, diagonalization, applications, computer exercises. Theory in Rn emphasized; general real vector spaces and linear transformations introduced.

Prerequisite: MATH 31 (with a grade of "C-" or better) or instructor consent.

3 units

MATH 129B. Linear Algebra II

Continuation of Math 129A. Abstract vector spaces and linear transformations, diagonalization, Cayley-Hamilton theorem, minimal polynomials, Jordan canonical form. Selected topics from inner product and adjoint, duality, rational canonical form and applications.

Prerequisite: MATH 108 and MATH 129A (with a grade of "C-" or better in each) or instructor consent.

3 units

MATH 131A. Introduction to Analysis

Properties of real numbers including completeness and compactness. Continuous functions, uniform continuity, the derivative.

Prerequisite: MATH 32 and MATH 108 (with a grade of "C-" or better in each) or instructor consent.

3 units

MATH 131B. Introduction to Real Variables

The theory of the Riemann integral, sequences and series of functions, spaces of functions.

Prerequisite: Math 131A (with a grade of "C-" or better) or instructor consent.

3 units

MATH 132. Advanced Calculus

Calculus of several variables; Jacobian, inverse and implicit function theorems, change of variables in integration and selected topics.

Prerequisite: MATH 32 (with a grade of "C-" or better) or instructor consent.

Offered only occasionally.

3 units

MATH 133A. Ordinary Differential Equations

First order equations, higher order linear equations, applications, Laplace transforms, series solutions. Additional topics.

Prerequisite: MATH 32 (with a grade of "C-" or better) or instructor consent.

3 units

MATH 133B. Partial Differential Equations

Partial differential equations of physics and engineering, Fourier series, Legendre polynomials, Bessel functions, orthogonal functions, the Sturm-Liouville equation.

Prerequisite: MATH 133A (with a grade of "C-" or better) or instructor consent.

3 units

MATH 134. Dynamical Systems

Introduction to dynamical systems theory and its applications. Topics include dynamical systems defined by maps and ordinary differential equations, stability, bifurcation theory, invariant manifolds and attractors. Applications will be taken from the physical sciences and engineering.

Prerequisite: MATH 129A and MATH 133A (with a grade of "C-" or better in each), or instructor consent.

3 units

MATH 138. Complex Variables

Analytic functions, complex integration, residues and power series.

Prerequisite: MATH 32 (with a grade of "C-" or better) or instructor consent.

3 units

MATH 142. Introduction to Combinatorics

Sets, permutations, combinations, probability, mathematical induction, counting techniques, generating functions, partitions, recurrence relations, inclusion-exclusion. Polya's theorem and applications to computer science, mathematics, engineering and physical sciences.

Prerequisite: MATH 31 and MATH 42 (with a grade of "C-" or better in each) or instructor consent.

3 units

MATH 143C. Numerical Analysis and Scientific Computing

Development and comparison of important algorithms for scientific computing in terms of efficiency, accuracy and reliability. Topics include nonlinear equations, interpolation, approximation theory, differentiation, integration, differential equations, numerical stability and error analysis. Substantial assignments using contemporary software packages and professional subprogram libraries.

Prerequisite: MATH 32; one of CS 50, CS 46A or CS 49 (with a grade of "C-" or better in each) or instructor consent.

3 units

MATH 143M. Numerical Analysis and Scientific Computing

Development and comparison of important algorithms for scientific computing in terms of efficiency, accuracy and reliability. Topics include systems of linear equations-direct and iterative methods, least squares problems, eigenvalues and eigenvectors, numerical stability and error analysis. Substantial assignments using contemporary software packages and professional subprogram libraries.

Prerequisite: MATH 129A; one of CS 50, CS 46A or CS 49 (with a grade of "C-" or better in each) or instructor consent.

3 units

MATH 161A. Applied Statistics I

Descriptive and inferential statistics. Collection and analysis of data, discrete and continuous probability models, random variables, Central Limit Theorem, confidence intervals, hypothesis testing.

Prerequisite: MATH 31 (with a grade of "C-" or better) or instructor consent.

3 units

MATH 161B. Applied Statistics II

A continuation of Math 161A. Two sample confidence intervals and hypothesis tests, analysis of variance, simple and multiple regression, chi-square tests of homogeneity and goodness-of-fit, other topics as time permits. Use of statistical software is integral to the course. Student project required.

Prerequisite: MATH 161A (with grade of "C-" or better), or instructor consent.

3 units

MATH 162. Statistics for Bioinformatics

Introduction to the theory and applications of statistical methodology in biological problems. Topics include classification, clustering, prediction, Markov models and experimental design. Emphasis on applying statistical methods to molecular biology problems. No biology background required.

Prerequisite: MATH 161A (with a grade of "C-" or better) or instructor consent.

3 units

MATH 163. Probability Theory

Probability axioms; random variables; marginal and conditional density and distribution functions; binomial, geometric, Poisson, gamma and normal probability laws; mathematical expectations, moment generating functions; limit theorems; sampling distributions.

Prerequisite: MATH 32 and MATH 161A (with a grade of "C-" or better in each) or instructor consent.

3 units

MATH 164. Mathematical Statistics

Sampling distributions, confidence intervals, order statistics, sufficient statistics, the Rao-Blackwell Theorem, completeness, uniqueness, point estimation, maximum likelihood, Bayes' methods, testing hypotheses, likelihood ratio tests, categorical data analysis, nonparametric tests.

Prerequisite: MATH 163 (with a grade of "C-" or better) or instructor consent.

3 units

MATH 171. Foundations of Mathematics and Computer Science

Fundamental and unifying principles of logic and computation. Introduction to mathematical logic for the mathematician and computer scientist.

Prerequisite: MATH 42 and upper division algebra (with a grade of "C-" or better in each) or instructor consent.

3 units

MATH 175. Introduction to Topology

Set theory, topological spaces and separation axioms, completeness, compactness, connectedness, functions and continuity, product spaces.

Prerequisite: MATH 131A (with a grade of "C-" or better) or instructor consent.

Alternate years.

3 units

MATH 177. Linear and Non-Linear Optimization

Linear inequalities, the simplex method and other algorithms, duality, integer optimization, convex optimization, quadratic optimization, game theory.

Prerequisite: MATH 129A (with a grade of "C-" or better) or instructor consent.

3 units

MATH 178. Mathematical Modeling

Basic modeling techniques including graphing, proportion, curve fitting and interpolation, optimization, probability and computer simulation, derivatives and differences. Technology will be incorporated to model applied problems from business/economics, physical/life/social sciences and engineering.

Prerequisite: MATH 129A (with a grade of "C-" or better) or instructor consent.

3 units

MATH 179. Introduction to Graph Theory

Hamiltonian and Eulerian properties, matching, trees, connectivity, coloring problems and planarity. Emphasis on algorithms and applications, including optimal network flows.

Prerequisite: MATH 42 and MATH 129A (with a grade of "C-" or better in each) or instructor consent.

3 units

MATH 180. Individual Studies

Individual study in a specific field.

Prerequisite: Department chair consent.

Repeatable for credit

Credit / No Credit

1-4 units

MATH 180H. Individual Studies for Honors

Senior project on advanced topics in mathematics as determined by the instructor. Written paper and oral presentation of the project required. Intended for students graduating with departmental honors.

Prerequisite: At least junior standing as mathematics major. GPA of 3.5 or higher in the major and department chair consent.

Credit / No Credit

3 units

GRADUATE**MATH 201A. Mathematics for Secondary Teachers**

Secondary school mathematics from an advanced viewpoint, plus topics from higher mathematics. Emphasizes inductive reasoning in problem solving. Applications useful to junior and senior high school teachers.

Prerequisite: Equivalent of mathematics minor or instructor consent.

3 units

MATH 201B. Mathematics for Secondary Teachers

Secondary school mathematics from an advanced viewpoint, plus topics from higher mathematics. Emphasizes deductive reasoning in problem solving. Applications useful to junior and senior high school teachers.

Prerequisite: Equivalent of mathematics minor or instructor consent.

MATH 201A is not a prerequisite.

3 units

MATH 203. Applied Mathematics, Computation, and Statistics Projects

Supervised teamwork to solve a substantial problem in mathematics or computer science usually supplied by an outside agency such as a local company. The number of different projects offered and the topics will vary widely. A project usually continues for two consecutive semesters.

Prerequisite: Instructor consent.

Repeatable for credit

Credit / No Credit

3 units

MATH 211A. Geometry of Projective Spaces

Structure of projective planes; finite planes and combinatorics; automorphism groups; configuration theorems and coordinatizations; conics; introduction to projective n-space over a field; topological properties; subgeometries.

Prerequisite: MATH 112 or MATH 115 or instructor consent.

Alternate years.

3 units

MATH 211B. Advanced Topics in Geometry

Projective n-space, linear geometry, crystallography, algebraic geometry and additional topics.

Prerequisite: MATH 211A or instructor consent.

Alternate years.

3 units

MATH 213. Advanced Differential Geometry

An intensive study of the intrinsic geometry of surfaces and of Riemannian geometry.

Prerequisite: MATH 113 or instructor consent.

Offered only occasionally.

3 units

MATH 221A. Higher Algebra I

Topics from groups, rings, integral domains, modules, fields, vector spaces.

Prerequisite: MATH 128B or instructor consent.

3 units

MATH 221B. Higher Algebra II

Continuation of Math 221A with additional advanced topics in algebra selected by instructor.

Prerequisite: MATH 221A or instructor consent.

3 units

MATH 226. Theory of Numbers

Advanced topics in number theory selected by the instructor. Emphasis may be in algebraic number theory (e.g. Diophantine equations), analytic number theory (e.g. the prime number theorem), and/or computational number theory (e.g. cryptography).

Prerequisite: MATH 126 and MATH 128A or instructor consent.

Alternate years.

3 units

MATH 229. Advanced Matrix Theory

Eigenvalues, unitary equivalence and Schur's theorem. Normal, Hermitian and symmetric real matrices. Positive definite matrices, polar and singular value factorizations, and selected topics at the discretion of the instructor.

Prerequisite: MATH 129B or instructor consent.

3 units

MATH 231A. Real Analysis I

Sigma algebras, construction of measures, differentiation, product measures, integration theory, the spaces L1 and C.

Prerequisite: MATH 131B or instructor consent.

3 units

MATH 231B. Real Analysis II

Function spaces and their duals, operators on function spaces, applications to analysis (classical and functional) and topics selected at the discretion of the instructor.

Prerequisite: MATH 231A or instructor consent.

3 units

MATH 233A. Applied Mathematics I

Derivation of the partial differential equations of classical mathematical physics. Existence and uniqueness of solutions of first order ordinary and partial differential equations. The classical theory of initial and boundary value problems for hyperbolic, parabolic and elliptic equations. Fourier series and transforms. Nonlinear partial differential equations.

Prerequisite: MATH 133B or instructor consent.

3 units

MATH 233B. Applied Mathematics II

Continuation of Math 233A. Selected topics such as Green's functions, eigenvalue problems, integral equations, perturbation theory or variational methods.

Prerequisite: MATH 138 and MATH 233A or instructor consent.

3 units

MATH 234. Advanced Dynamical Systems

Continuous and discrete dynamical systems with applications. Topics include stability of equilibria and closed orbits, structural stability, applications in classical mechanics, biology and engineering, including control systems.

Prerequisite: MATH 134 or instructor consent.

3 units

MATH 235. Wavelets and their Applications

Wavelets with particular emphasis on their use in the representation of digital signals and image analysis. Theory of filters, filter banks and wavelets with applications selected from image and video compression, speech, audio and ECG compression, and communication applications.

Prerequisites: MATH 129A and MATH 133A, or instructor consent.

3 units

MATH 238. Advanced Complex Variables

A course specializing in one or more of the advanced branches of the theory of complex functions.

Prerequisite: MATH 138 or instructor consent.

Alternate years.

3 units

MATH 243A. Advanced Numerical Analysis

Finite difference methods applied to parabolic, elliptic and hyperbolic equations including numerical methods for solving the discretized problem, convergence, stability, error control, and applications.

Prerequisites: MATH 143C or MATH 143M or instructor consent.

3 units

MATH 243B. Advanced Topics in Numerical Analysis

Advanced topics in numerical methods.

Prerequisite: MATH 143C or MATH 143M; and instructor consent.

Alternate years.

3 units

MATH 261A. Regression Theory and Methods

Simple linear regression, multiple regression, indicator variables, influence diagnostics, transformations, assumption analysis, generalized linear models, nonlinear regression, CART, hypothesis testing, confidence and prediction intervals, variable selection and model building.

Prerequisites: MATH 129A and either MATH 161A or MATH 164.

3 units

MATH 261B. Design and Analysis of Experiments

Principles, construction and analysis of experimental designs. ANOVA; randomized blocks, Latin squares, factorial, nested and other designs; fixed and random effects, multiple comparisons, repeated measures. Expected mean squares. Diagnostics and model comparison.

Prerequisite: MATH 261A.

3 units

MATH 265. Time Series Theory and Methods

Analysis of correlated data in time, trends, seasonal patterns, periodicity, autocorrelation, spectral/frequency analysis, filtering, ARIMA models, state-space models, forecasting. Applications from various fields including economics, signal processing, finance, atmospheric science.

Prerequisites: MATH 129A and either MATH 161A or MATH 164.

3 units

MATH 266. Survival Analysis and Reliability

Statistical methods for analysis of time-to-event censored data. Survival distributions and hazard rates; Kaplan-Meier estimator; proportional hazards; partial likelihood; diagnostics. Applications from clinical trials, toxicology and tumorigenicity studies, epidemiological studies, and engineering reliability.

Prerequisite: MATH 161A or MATH 164.

3 units

MATH 271A. Mathematical Logic

Formal systems; introductory model theory (Godel's completeness theorem, compactness, Lowenheim-Skolem theorem, etc.); Godel's incompleteness theorems.

Prerequisite: MATH 171 or instructor consent.

3 units

MATH 271B. Advanced Mathematical Logic

A course specializing in one or more of the branches of mathematical logic such as set theory, model theory, recursion theory, proof theory.

Prerequisite: MATH 271A or instructor consent.

3 units

MATH 275. Topology

A course specializing in one or more topics from advanced topology such as homotopy and the fundamental group, homology groups of spaces, continuum theory, function spaces, metrization, dimension theory, manifolds, topological groups.

Prerequisite: MATH 175 or instructor consent.

Alternate years.

3 units

MATH 279A. Graph Theory

Advanced course in graph theory covering graphs, digraphs, trees, networks, connectedness, eulerian circuits, hamiltonian cycles, graph embeddings, matchings, factorizations, graph colorings and Ramsey theory.

Prerequisite: MATH 179, or both MATH 142 and an upper division algebra class, or instructor consent.

Alternate years.

3 units

MATH 279B. Advanced Graph Theory

Advanced topics in modern graph theory selected by instructor. Possible topics are algebraic graph theory, random graph theory, matroid theory, ramsey theory, expander graphs, and others.

Prerequisite: MATH 279A or instructor consent.

3 units

MATH 285. Advanced Topics in Mathematics

Selected topics in Mathematics. Topics vary each semester. A maximum of 12 units may be repeated.

Prerequisite: Suitable upper division background in mathematics set by instructor.

Repeatable for credit

3 units

MATH 298. Special Study

Advanced individual research and projects.

Prerequisite: Department chair consent.

Repeatable for credit

Credit / No Credit

1-4 units

MATH 299. Master's Thesis

Prerequisite: Admission to candidacy for the MA or MS degree.

Repeatable for credit

Credit/No Credit/Report in Progress

1-4 units

GRADUATE**MTED 209. Research in Mathematics Education**

Theories of learning mathematics; recent trends in mathematics curriculum and pedagogy; types of research in mathematics education; methods of conducting research in mathematics education; developing research questions; conducting library research; and synthesis of research in various areas of mathematics education.

Pre/Corequisite: MATH 201A or MATH 201B or instructor consent.

3 units

MTED 394. Secondary School Mathematics

The place and function of mathematics in secondary education, improvement and evaluation of instruction. Teaching the subject matter of secondary mathematics.

Prerequisite: MATH 201A or MATH 201B and, either passing score on the CSET exams or be within 3 courses of completing the subject matter preparation program, or instructor consent.

3 units

MATHEMATICS EDUCATION**UPPER DIVISION****MTED 166. Pre-Professional Experience**

Participation in a tutoring program for lower division mathematics students or serving as teacher assistant. Instruction appropriate to tutoring. A maximum of 6 units may be repeated.

Repeatable for credit

Credit / No Credit

1-3 units

MTED 184I. Student Teaching for Mathematics Individualized Interns

Supervised student teaching in mathematics class(es) in the public school where the student is employed as an Individualized Intern. A total of 12 units may be repeated.

Prerequisite: Admission to Single Subject Credential Program; mathematics advisor and Single Subject Coordinator consent.

Repeatable for credit

Credit / No Credit

2-4 units

MTED 184Y. Student Teaching II – Classroom Teaching

Minimum 80-120 class periods of classroom teaching, laboratory or field teaching in appropriate single subjects, grades K-12 and related teaching activities. Attendance at a weekly seminar is required.

Prerequisite: MTED 394 and joint approval of Mathematics and Education departments.

Repeatable for credit

Credit / No Credit

4-6 units

MTED 184Z. Student Teaching III – Classroom Teaching

Same as MTED 184Y, including the seminar, but in a different course. May be in a different school.

Prerequisite: MTED 394 and joint approval of the Mathematics and Teacher Education Departments.

Repeatable for credit

Credit / No Credit

4-6 units

Mechanical and Aerospace Engineering

College of Engineering

Engineering 310
408-924-3850

Professors

Raghav B. Agarwal, Graduate Coordinator
Fred Barez, Chair
Burford J. Furman
Tai-Ran Hsu
Nikos J. Mourlos
Periklis Papadopoulos
William W. Seto
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

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

Department Educational Objectives:

1. To provide students with a strong foundation in mathematics, basic science and engineering fundamentals to successfully compete for entry-level positions or pursue graduate studies in Mechanical and Aerospace Engineering or related fields.
2. Contemporary professional and lifelong learning skills including hands-on laboratory experience, familiarity with computers, modern software, and information technology, to successfully compete in the local, national and global engineering market.
3. Strong communication and interpersonal skills, broad knowledge, and an understanding of multicultural and global perspectives to work effectively in multidisciplinary teams, both as team members and as leaders.
4. An understanding of the ethical choices inherent in the engineering profession to deal with issues such as public safety and respect for intellectual property.

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.

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 undergraduate curriculum is accredited by the Accreditation Board for Engineering and Technology (ABET).

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 coursework 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 undergraduate curriculum is accredited by the Accreditation Board for Engineering and Technology (ABET).

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 106, ME 114, ME 115, ME 120, ME 130, ME 147, ME 154, ME 195A, ME 195B and CE 113	
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 70 series.

To qualify for a baccalaureate degree in Mechanical Engineering, a student must receive a grade of "C" or better in CE 99, CE 112, ME 101, ME 106, ME 111, ME 113 and a grade of "C-" or better in all other courses required for the program (Major and Technical Electives).

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	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	66
Engineering Common Area	31
ENGR 010, ENGR 100W, CE 099, CE 112, EE 098, MATE 025, ME 020, ME 030, ME 101, ME 111 and ME 113	
Required Courses	29
AE 114, AE 140, AE 162, AE 164, AE 165, AE 167, AE 168, AE 169, ME 120 and ME 130	
Required Capstone Course	6
AE 171A and AE 171B (6); AE 172A and AE 172B (6)	
Additional Major Courses	4-6
Technical electives can be chosen from designated courses for breadth or focus in one of the three areas of aircraft or spacecraft design, space systems, or space transportation with advisor approval.	
Total Units Required	134

*Applies to those students not taking American Studies and the Physics 70 series.

To qualify for a baccalaureate degree in Aerospace Engineering, a student must receive a grade of a grade of "C" or better in CE 99, CE 112, ME 101, ME 111, ME 113 and a grade of "C-" or better in all other courses required for the program (Major and Technical Electives).

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

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 requirement 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 coursework 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 coursework 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 Studies and Research website at www.sjsu.edu/gradstudies.

Required Courses for MS – Mechanical Engineering

	Semester Units
Program Required Courses	6
ME 230 (3) and ME 270 or ME 273 (3)	
Suggested Courses for the Area of Specialization	12
See the Program Advisor or Department handout for the list of 200-level Mechanical Engineering courses.	
Elective Courses	6
Elective courses need to be planned in consultation with the Program Advisor.	
Thesis or Project	6
ME 299 (Thesis) (6) or ME 295A and ME 295B (Project) (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

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 requirement 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 coursework 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 coursework 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
Program Required Courses	6
ME 230 (3) and ME 270 or ME 273 (3)	
Suggested Courses for the Area of Specialization	12
See the Program Advisor or Department handout for the list of 200-level Aerospace Engineering courses.	
Elective Courses	6
Elective courses need to be planned in consultation with the Program Advisor.	
Thesis or Project	6
AE 299 (Thesis) (6) or AE 295A and AE 295B (Project) (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 Studies and Research website at www.sjsu.edu/gradstudies.

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.

Courses

AEROSPACE ENGINEERING

UPPER DIVISION

AE 110. Space Systems Engineering

Introduction to design, analysis and operation of spacecraft power, communications, attitude determination/control, structures, propulsion, thermal management systems. Typical payload systems design and operation, including remote Earth sensors. System integration issues. Lab experiments and field trips.

Prerequisite: AE 165.

3 units

AE 114. Aerospace Structures

Aircraft, missile, spacecraft structural design and analysis. Static, elastic and stress analysis of structures. Structural materials. Deflection analysis of structural systems. Conventional, stiffened, sandwich and composite structures. Structural dynamics. Thermal effects.

Prerequisite: CE 112.

3 units

AE 135. Introduction to Composite Materials

See MATE 135.

3 units

AE 140. Rigid Body Dynamics

Coordinate frames and descriptions of absolute and relative motion. General equations of rotational motion for single and multibody systems in Euler and Lagrangian formulations. Elasticity and dissipation effects. Spinning body motions. Impulsive motions. Applications to aerospace vehicles.

Prerequisite: ME 101.

3 units

AE 162. Aerodynamics

Aerodynamic forces, moments. Flow similarity. Potential flow. Airfoils, wings in low-speed, high-speed flow. Boundary layers, skin friction drag. Flow measurement, visualization in subsonic and smoke tunnels.

Prerequisite: ME 111.

Corequisite: ENGR 100W.

Lecture 2 hours/lab 3 hours.

3 units

AE 164. Compressible Flow

Normal shock waves, oblique shocks, expansion waves, nozzle flow, heat addition, friction, method of characteristics. Numerical methods. Shock tunnel experiment.

Prerequisites: ENGR 100W, ME 111, ME 113.

Lecture 2 hours/lab 3 hours.

Repeatable for credit

3 units

AE 165. Aerospace Flight Mechanics

Trajectory dynamics of atmospheric flight (aircraft and missiles) and spaceflight (orbital mechanics). Influence of vehicle design on trajectory. Aircraft static performance, stability and control. Rocket launch and re-entry dynamics. Computer simulations.

Prerequisite: ME 101.

3 units

AE 167. Aerospace Propulsion

Theory, design and performance of turbojet derivative engines, ramjet and hybrid engines, solid and liquid propellant rocket engines. Applications to aircraft, missile, and spacecraft systems.

Prerequisites: ME 111 and ME 113.
3 units

AE 168. Aerospace Vehicle Dynamics and Control

Aircraft/spaceship dynamics, stability and control. Linearization and Euler transformations. Eigenvalues and eigenvectors. State space and transfer function analysis of dynamics of aerospace vehicles. Feedback control design and synthesis using advanced control techniques.

Prerequisites: AE 140, AE 165.
3 units

AE 169. Computational Fluid Dynamics

Physical and mathematical foundations of computational fluid mechanics with emphasis on applications. Solution methods for model equations and the Euler and the Navier-Stokes equations. The finite volume formulation of the equations. Classification of partial differential equations and solution techniques. Truncation errors, stability.

Prerequisite: AE 164.
Lecture 2 hours/lab 3 hours.
3 units

AE 171A. Aircraft Design I

Conceptual and preliminary design of airplanes. Mission specification, figures of merit, weight sizing, performance constraint analysis, configuration design, fuselage design, wing and high-lift system design, empennage design, landing gear design. Ethics, safety and liability issues.

Prerequisites: ME 20, AE 162, AE 165, AE 114.
Pre/Corequisite: AE 167.
Lab 9 hours.
3 units

AE 171B. Aircraft Design II

Preliminary and detail design of aircraft. Weight and balance analysis, stability and control analysis, drag polar estimation, resizing. Participation in professional society design/build/fly competitions. Ethics, safety and liability issues.

Prerequisites: AE 171A, AE 167.
Pre/Corequisite: AE 168.
Lab 9 hours.
3 units

AE 172A. Spacecraft Design I

Team-based preliminary design of planetary probes, spacecraft or launch vehicle. Development of an initial vehicle concept and a complete numerical model of the mission. Ethics, safety, and liability issues.

Prerequisites: ME 20, AE 162, AE 165, AE 114.
Pre/Corequisite: AE 110, AE 167
Lab 9 hours.
3 units

AE 172B. Spacecraft Design II

Preliminary and detail design of spacecraft. Spacecraft construction, integration, and testing. Ethics, safety, and liability issues.

Prerequisites: ME 172A, AE 167, AE 110.
Pre/Corequisite: AE 168.
9 hour Lab.
3 units

AE 180. Individual Studies

Individual work on special topics. By arrangement.

Prerequisites: Upper division standing and Instructor Consent.
Repeatable for credit
Credit / No Credit
1-3 units

AE 198. Technology and Civilization

See TECH 198.

GE: V
3 units

GRADUATE**AE 210. Advanced Space Systems Engineering**

Overview of the engineering process used in aerospace mission and system design spanning the entire system life cycle for the near-Earth and outer space environment. Effects of gravity field, temperature and radiation on physical systems and the human organism. Mission program inception, proposal development, cost analysis and risk management.

Prerequisites: BSAE or Instructor Consent.
3 units

AE 222. Spacecraft Payload Sensors

Analysis/design of common spacecraft instrumentation and payload sensors. Mission-based characterization of payload sensors including electro-optical, visible, infrared, active/pассив RF sensor types. Performance criteria and influence of orbit; computer simulations.

Prerequisite: BSAE or Instructor Consent.
3 units

AE 242. Orbital Mechanics and Mission Design

Two-body problem, conic sections, time of flight. Gibb's method of orbit determination, maneuver analysis for Earth orbiters and interplanetary flight. Euler-Hill equations. Mission design constraints on orbit geometry and launch window analysis.

Prerequisite: BSAE or Instructor Consent.
3 units

AE 243. Advanced Astrodynamics

Analysis of spacecraft motion using different dynamic models and perturbations. Use of the state transition matrix and differential corrections technique for trajectory computation. Orbit determination and station-keeping methods. Introduction to the three-body problem. Application of computational and analytic methods to solve astrodynamical problems.

Prerequisite: AE 242.
3 units

AE 245. Spacecraft Dynamics and Control

Rigid body dynamics review. Attitude kinematical representations. Development and solution of general equations of motion. Single and dual-spin, zero and biased-momentum spacecraft. Control system design strategies. Common torquer elements. Computer simulations.

Prerequisite: BSAE or Instructor Consent.
3 units

AE 246. Advanced Aircraft Stability and Control

Natural longitudinal and lateral/directional motion of aircraft; mode shapes, eigenvalues, eigenvectors. Analysis and synthesis of various aircraft autopilots using classical and state space formulations.

Prerequisite: BSAE or Instructor Consent.
3 units

AE 250. Advanced Structures and Materials

Design and analysis of modern flight structures including static and dynamic structural response; materials design including metals, alloys, composites. Introduction to modern computational methods including finite elements.

Prerequisite: BSAE or Instructor Consent.
3 units

AE 262. Advanced Aerodynamics

Thin airfoil theory. Prandtl's lifting-line theory. Subsonic and supersonic airfoil and wing theory. High-angle of attack aerodynamics. Boundary layer theory; Blasius and Falkner-Skan solutions, compressible boundary layers, turbulent flows, separation criteria.

Prerequisite: BSAE or Instructor Consent.
3 units

AE 264. Advanced Compressible Flow

Advanced topics in compressible flow. Shock and expansion waves. Flow through nozzles and diffusers. Method of characteristics. Unsteady wave motion. Subsonic, transonic, supersonic, and hypersonics flows.

Prerequisite: BSAE or Instructor Consent.
3 units

AE 267. Space Propulsion Systems

Rocket propulsion fundamentals. propulsion requirements for: multi-stage launch; orbit establishment, maneuvers and maintenance; spacecraft attitude control. Nozzle flow, thermochemical calculation of performance. Design and performance calculations for systems and components of chemical rockets (liquid, solid, hybrid), electric rockets and advanced concepts.

Prerequisite: BSAE or Instructor Consent.
3 units

AE 269. Advanced Computational Fluid Dynamics

Advanced topics in computational fluid dynamics and numerical techniques to solve the Euler and Navier-Stokes equations. The student will use MatLAB, grid generation, CFD and visualization software for homework, and projects.

Prerequisite: BSAE or Instructor Consent.
Seminar 2 hours/lab 3 hours.
3 units

AE 270. Spacecraft Thermal Systems

Review of heat transfer fundamentals. Steady-state and transient modeling and computational solution techniques. Spacecraft thermal requirements; applicable standards. Applications to electronic packages, solar arrays, SDI designs, cryogenic and optical systems.

Prerequisite: BSAE or Instructor Consent.
3 units

AE 275. Spacecraft Power Systems

Design/implementation of space power systems including source, conversion, distribution protection, control and regulation elements. Integration into the spacecraft system. Generation elements include solar cells/arrays, fuel cells, batteries, nuclear. Test and verification.

Prerequisite: BSAE or Instructor Consent.
3 units

AE 295A. Aerospace Engineering Project I

Research, design and development projects involving aerospace systems/components. Most projects will involve local aerospace industry applications, support and participation. Projects may involve individuals or student teams.

Prerequisites: Admission to candidacy for the master's degree and a written proposal approved by instructor and graduate advisor.
3 units

AE 295B. Aerospace Engineering Project II

Continuation of AE 295A. Students complete the in-depth project, write a detailed engineering report and make a comprehensive presentation. Students must also attend an Aerospace Engineering seminar and participate in a teaching project.

Prerequisite: AE 295A.

3 units

AE 298. Special Projects in Aerospace Engineering

Advanced individual work in Aerospace Engineering.

Prerequisite: Instructor Consent.

Repeatable for credit

Credit / No Credit

1-3 units

AE 299. Master's Thesis

Master's thesis work in aerospace engineering. Participation in a teaching experience.

Prerequisites: Admission to candidacy for the master's degree and a written proposal approved by instructor and graduate advisor.

Repeatable for credit

Credit/No Credit/Report in Progress

3 units

MECHANICAL ENGINEERING**LOWER DIVISION****ME 015. Empower MAE Students**

Empower MAE students to stay on course towards achieving career goals as engineers. Provide tools and opportunities to guide students towards career development, community and service involvement, technology and entrepreneurship. Expose these students to career opportunities through technical seminars, outreach technical and community related projects, and tours.

3 units

ME 019. Graphics for Engineers

Introduction to graphical communication tools. Design and graphical solutions to two and three-dimensional design problems. Development of visualization and technical sketching skills in conjunction with pictorial projections Individual design project. Focus on computer-aided drawing and design.

1 unit

ME 020. Design and Graphics

Introduction to design and graphical solutions to three-dimensional design problems involving points, lines, surfaces and solids. Development of visualization and technical sketching skills in conjunction with orthographic and pictorial projections. Focus on computer-aided design and graphical analytical methods.

Corequisite: ENGR 10.

Lecture 1 hour/lab 3 hours.

2 units

ME 030. Computer Applications

Using a computer to solve engineering problems through programming and the use of engineering application procedures. Use of procedural and informational problem solving methods and practices applied to software design, application, programming and testing.

Lecture 1 hour/lab 3 hours.

2 units

ME 040. Product Design I

See TECH 040.

Repeatable for credit

3 units

UPPER DIVISION**ME 101. Dynamics**

Vector mechanics. Two and three dimensional motion of particles and rigid bodies. Force, energy and momentum principles.

Prerequisites: CE 99, MATH 32. Grade of "C-" or better required for ME and AE majors.

3 units

ME 106. Fundamentals of Mechatronics Engineering

Foundational concepts in mechatronics including analog and digital electronics, sensors, actuators, microprocessors and microprocessor interfacing to electromechanical systems. Hands-on laboratory experiments with components and measurement equipment used in the design of mechatronic products.

Prerequisites: EE 98 and ME 30.

For IT majors: TECH 60, MATH 71, CS 49C OR CMPE 46.

Lecture 2 hours/lab 3 hours.

3 units

ME 109. Heat Transfer in Electronics

See CHE 109.

3 units

ME 110. Manufacturing Processes

Fundamentals of manufacturing processes such as machining, forming, cutting, welding and casting. Selection of materials. Production facility practices and meteorology. Geometric dimensions and tolerancing.

Prerequisites: MATE 25, ME 20.

Lecture 2 hours/lab 3 hours.

3 units

ME 111. Fluid Mechanics

Fluid properties, statics, dynamics of fluids; continuity, linear and angular momentum and energy principles. Viscous and non-viscous flow. Pumps, turbines, flow in pipes and around submerged obstacles. Dimensional analysis and dynamic similitude.

Prerequisites: MATH 32, CE 99. Grade of "C-" or better required for all ME and AE majors.

3 units

ME 113. Thermodynamics

Properties of simple compressible substances, ideal gas and other equations of state. First and Second Laws of Thermodynamics, energy, and irreversibility. Power cycles and refrigeration cycles. Gas mixtures, gas-vapor mixtures, and air conditions processes.

Prerequisites: PHYS 70 or PHYS 52, MATH 32. Grade of "C-" or better required for ME and AE majors.

4 units

ME 114. Heat Transfer

Conduction, convection and radiation heat transfer with applications. Analytical, experimental, and computational methods of analyzing heat transfer behavior.

Prerequisites: MATH 133A or MATH 123, ME 113.

3 units

ME 115. Thermal Engineering Laboratory

Thermodynamics and heat transfer experiments. Temperature, pressure, and flow rate measurements. Technical reports and presentations.

Pre/Corequisite: ME 114.

3 hour Lab.

1 unit

ME 120. Experimental Methods

Theory and practice of experimental methods and sensors for mechanical measurements; statistical and uncertainty analysis; computer-hosted data acquisition, processing and analysis; formal report writing and presentations.

Prerequisites: CE 112, ENGR 100W, ME 111, ME 130.

Lecture 1 hour/lab 3 hours.

2 units

ME 130. Applied Engineering Analysis

Analytic models for physical systems in mechanical engineering. Practical interpretations of analytical solutions. Introduction to linear algebra and statistics.

Prerequisites: MATH 133A, ME 101 and ME 113.

3 units

ME 135. Introduction to Composite Materials

See MATE 135.

3 units

ME 136. Design for Manufacturability: With Emphasis on Mechatronic Products

Principles and practice of design and manufacturability with emphasis on mechatronics; design parameters; manufacturing techniques; reliability; design for quality, assembly and environmental considerations; case study projects and laboratory activities.

Prerequisites: ME 110, ME 154.

3 units

ME 140. Product Design II

See TECH 140.

Repeatable for credit

3 units

ME 141. Product Design III

See TECH 141.

3 units

ME 145. Electronic Packaging and Design

Introduction to electronic packaging including thermal management and application of integrated cooling and thermal MEMS; shock and vibrations; materials; EMI/RFI/ESD; reliability and standard test.

Prerequisites: ME 114, ME 130.

Lecture 2 hours/lab 3 hours.

3 units

ME 146. Thermal Management of Electronic Systems

Fundamentals of heat transfer in electronic systems. Application of theory and engineering practice to the design and analysis of systems for the thermal management of electronic systems.

Prerequisites: ME 114 or ME 109 or CHE 109.

Lecture 2 hours/lab 3 hours.

3 units

ME 147. Dynamic Systems Vibration and Control

Mathematical representation of dynamic systems. Damped and undamped free and forced vibrations for single and multiple degree of freedom systems. Vibration control and isolation. Dynamic analysis of control systems. Transient response, frequency response and the stability criteria. State-variables approach. Feedback and feedforward compensation. Emphasis on engineering problems involving analysis and design.

Prerequisite: ME 130.

3 units

ME 149. Engineering Acoustics

Generation, transmission and absorption of sound. Noise measurement. Applications to architectural design, control and reduction of noise.

Prerequisite: ME 130.

3 units

ME 154. Mechanical Engineering Design

Introduction to the design and analysis of mechanisms and machine elements. Linkage synthesis. Kinematic and dynamic analysis of mechanisms. Application of statics, dynamics, strength of materials, static failure theories and fatigue theory to the design of machine components. Threaded fasteners. Group design project.

Prerequisites: CE 112, ME 20, ME 101.

4 units

ME 157. Mechanical System Design

Introduction to the mechanical design process. Design and selection of specific machine components including springs, bearings, brakes, clutches and gears. Introduction to fatigue design using fracture mechanics. Application of plastics, composite materials and finite element methods in design. Group design project. Computer applications in the design process and in design optimization.

Prerequisite: ME 154.

Corequisites: ME 110, ME 147.

3 units

ME 160. Introduction to Finite Element Method

Matrix algebra, interpolation functions. Deformation and stress analysis, using truss, beam, plate and axisymmetric elements.

Prerequisites: CE 112 and ME 130.

3 units

ME 165. Computer-Aided Design in Mechanical Engineering

Theory and application of CAD. 2-dimensional and 3-dimensional modeling, commercial CAD software. Application to finite element analysis.

Prerequisites: CE 112, ME 20, ME 130.

3 units

ME 167. Introduction to Engineering Biomechanics

Introduction to the mechanics of the muscular-skeletal system. Kinematics and dynamics of Motion, mechanical behavior of Physiological Systems. Application of engineering fundamentals to the human body structure and functional relationship

Prerequisites: ME 130, ME 154, Instructor Consent. 3 units

ME 169. Microelectromechanical Systems Fabrication and Design

Hands-on design, fabrication, and testing of micro electro-mechanical systems (MEMS). Processes including oxidation, photolithography, etching, wet processing, and metal deposition applied to MEMS. Design problems for MEMS transducer components such as cantilever beam actuators, membrane deflection sensors, and microfluidic flow channels.

Prerequisites: CE 112 or MATE 25 or EE 98.

Lecture 2 hours/lab 3 hour.

3 units

ME 170. Solar Energy Engineering

Fundamentals of solar energy engineering, basic principles, design and operation of solar systems. Solar energy generation, storage and system efficiency.

Prerequisites: ME 111, ME 114

3 units

ME 172. Alternative and Renewable Energy Resources

An introduction to alternative energy sources such as solar, wind, nuclear, geothermal, hydroelectric, biomass and fuel cell. Stationary power generation and storage.

Prerequisites: ME 111, ME 114.

3 units

ME 180. Individual Studies

Individual work on special topics. By arrangement.

Prerequisites: Upper division standing and Instructor Consent.

Repeatable for credit

Credit / No Credit

1-3 units

ME 182. Thermal Systems Design

Integration of thermodynamics, fluid mechanics, heat transfer and economics in the design of energy conversion and transfer systems, e.g., power generation, electronics and human thermal control.

Prerequisites: ME 111, ME 114.

3 units

ME 183. HVAC Systems Design

Calculation of heating and cooling loads. Psychometrics and human comfort. Heating, ventilation and air conditioning systems and equipment. Design of secondary systems for heating and cooling of buildings.

Pre/Corequisite: ME 114.

Lecture 2 hours/lab 3 hours.

3 units

ME 184. High Vacuum Systems Engineering with Applications

Vacuum technology and methods for creation/control of vacuum process environment. Vacuum pumping, pressure measurement, process gas control, robotic loading mechanisms. Process applications: deposition, etching. Materials and instrumentation in design, construction of vacuum systems.

Prerequisites: ME 106, ME 154.

3 units

ME 186. Automotive Engineering

Overview of automotive engineering including aerodynamics, structures, suspension, steering, brakes and drive-train. Application of engineering principles in automotive design and analysis. Use of vehicle dynamic simulation for performance analysis.

Prerequisites: ME 114, ME 130, ME 154.

3 units

ME 187. Automatic Control Systems Design

Analysis of dynamic systems in time and frequency domain. Design of automatic control systems. Analog and digital control systems design. Computer aided control system design and performance evaluation.

Prerequisite: ME 147.

3 units

ME 188. Introduction to Hard Disk Drive Technology

Overview of the technologies involved in computer hard disk drives. Topics such as magnetic recording principles, tribology, shock and vibration, electromechanical devices and control, thermal, and reliability will be presented.

Prerequisites: ME 106, ME 147, ME 154.

3 units

ME 189. Design and Manufacture of Microsystems

Overview of design and manufacture of microdevices and systems including MEMS. Engineering physics and mechanics; scaling laws for miniaturization, microfabrication technique, material selection, microsystems design methodologies, microsystems packaging design.

Prerequisites: ME 106, ME 154.

3 units

ME 190. Mechatronics System Design

Process modeling from test data. Computer-aided dynamic system control analysis and design. Application and integration of micro-controller for digital process and servo control. Development of smart and intelligent products with micro-controller.

Prerequisites: ME 106 or EE 106.

Corequisite: ME 147.

Lecture 2 hours/lab 3 hours.

3 units

ME 192. Robotics and Manufacturing Systems

Scientific and engineering principles of robotics in the area of mechanical manipulation, dynamics, sensing, actuation, control, computer vision and manufacturing automation application. Motor, motion control, digital control devices application and integration.

Prerequisites: ME 106, ME 130.

Lecture 2 hours/lab 3 hours.

3 units

ME 195A. Senior Design Project I

First half of a one-year team project carried out under faculty supervision. Project will proceed from problem definition to analysis, design and validation, experimentation including possible construction and testing.

Prerequisites: ME 114, ME 154.

Pre/Corequisite: ME 120.

Lab 9 hours.

3 units

ME 195B. Senior Design Project II

Continuation of ME 195A. Culmination of project requiring a formal report consisting of documentation of project results and oral presentation.

Prerequisite: ME 195A.

Lab 9 hours.

3 units

ME 197. Cooperative Education Project

See ENGR 197.

3 units

ME 198. Technology and Civilization

See TECH 198.

GE: V

3 units

ME 199. Special Topics in Mechanical Engineering

Special Topics in Mechanical Engineering. Content varies from semester to semester. A total of six units may be repeated.

Prerequisite: Instructor Consent.

Repeatable for credit

3 units

GRADUATE**ME 200. Thermal/Fluids Engineering**

Application of fundamental thermal-fluids relationships to the analysis, selection, and modeling of thermal-fluid equipment such as pumps, compressors, fans, and heat exchangers. Computer simulations of thermal-fluid systems. System optimization using economic and energy-based constraints.

Prerequisites: ME 111 and ME 114 or equivalent.

3 units

ME 210. Advanced Thermodynamics

Application of the first and second laws of thermodynamics to the analysis of engineering systems. Equations of state and thermodynamic property relations. Chemical equilibrium and combustion.

Prerequisite: BSME or Instructor Consent.

3 units

ME 211. Advanced Heat Transfer

Conduction, convection and radiation heat transfer, including conjugate problems. Numerical methods and use of the computer to solve heat transfer problems.

Prerequisite: ME 114 or equivalent.

3 units

ME 221. Viscous Flow Analysis and Computation

The Navier-Stokes equations for laminar flow; exact solutions, lubrication theory and boundary layer flows with computer-based solution techniques. Reynolds-averaging and turbulent flow; solution of the Reynolds-averaged full and boundary layer equations using computers.

Prerequisites: ME 200 and ME 270.

3 units

ME 223. Gas Dynamics

Integral and differential mass, momentum, energy equations for compressible flow. One-dimensional flow with area change, heat addition, friction. Normal and oblique shocks, expansion waves and unsteady wave motion. Linearized flow. Numerical techniques. Real gas effects.

Prerequisite: BSME or Instructor Consent.

3 units

ME 230. Advanced Mechanical Engineering Analysis

Designed to supplement and enrich students with advanced mathematical methods in treating problems selected from various areas of mechanical engineering. Topics discussed will include Fourier series, special functions, solutions to partial differential equations and numerical methods.

Prerequisite: BSME or BSAE or Instructor Consent.

3 units

ME 240. Rigid Body Dynamics

Introduction to Euler's method, Lagrange's equations of motion and Hamilton's principle. Three-dimensional dynamics in vector and tensor notation. Multi-body dynamics. Application to engineering problems including numerical solutions.

Prerequisite: BSME or Instructor Consent.

3 units

ME 243. Vibration of Mechanical Systems

Vibration of MDOF (Multi-degree of Freedom) systems. Eigenvalue problems. Modal analysis of damped systems. Superposition and direct integration methods. Complex frequency response. Random vibration of MDOF systems. Shock and impulse. Vibration of strings, rods and beams.

Prerequisite: BSME or Instructor Consent.

3 units

ME 244. Modal Analysis Theory and Applications

Structural dynamic analysis, test data acquisition, transfer function measurement and the estimation of modal parameters. Digital signal processing, Fourier transform, random vibrations, sampling, measurement of power and cross spectrum, the frequency response function and Coherence function.

Prerequisite: Graduate standing in ME, AE or Instructor Consent.

3 units

ME 250. Precision Machine Design

Principles of precision machine design. Exact kinematic constraint. Error motions of a machine. Integration of mechanical design, materials, sensors, and metrology for precision applications.

Prerequisite: BSME or Instructor Consent.

3 units

ME 260. Applied Stress Analysis

Introduction to stress analysis techniques, including advanced strength of materials, energy methods and theory of elasticity. Elastic-plastic stresses, creep, fatigue, fracture mechanics, failure analysis.

Prerequisite: BSME or Instructor Consent.

3 units

ME 265. Computer-Aided Mechanical Engineering Design

Integrated approach to CAD including: overview of CAD, numerical techniques for CAD, computer graphics and design, principles and management of design database systems, finite element analysis and CAD, design optimization, computer-aided linkage design and integrated CAD systems.

Prerequisite: BSME or Instructor Consent.

3 units

ME 267. Engineering Biomechanics

Biomechanics and biodynamics modeling of physiological components, application of engineering fundamentals to the human body structure and function. Bioelastic and biofluids, bioengineering, and design consideration for biomedical and orthopedic devices.

Prerequisite: Graduate standing or Instructor Consent.

3 units

ME 270. Numerical Methods in Engineering

Introduction and application of numerical methods to the solution of physical and engineering problems. Generalized coordinate transformation, grid generation, and computational algorithms. Techniques for parabolic, elliptical and hyperbolic differential equations. Implicit and explicit methods of solution. Accuracy and stability considerations.

Prerequisite: BSME or BSAE or Instructor Consent.

Lecture 2 hours/lab 3 hours.

3 units

ME 273. Finite Element Methods in Engineering

Introduction into various finite element methods for developing stiffness equation. Truss, beam, 2-D, 3-D and axisymmetric elements. Applications and case studies.

Prerequisite: BSME or Instructor Consent.

3 units

ME 280. Automatic Control Engineering

Formulation of multiple dynamic systems in state space form. System transient response, stability, controllability and observability. Design of control system using conventional and modern methods. Optimum system design. Computer aided dynamic system analysis, control system design and simulation.

Prerequisite: BSME or Instructor Consent.

3 units

ME 281. Advanced Control System Design

Establishment of design criteria. Digital control system design based on conventional and modern approaches. Intelligent control system design. Digital control system hardware and software. Case studies. Microprocessor implementation of control systems.

Prerequisite: ME 280 or equivalent.

3 units

ME 283. Automatic Control of Manufacturing Processes

Develops general concepts for control of manufacturing processes. The concepts of and tools for process modeling, process optimization and process control. Emphasizes the integrated approach combining statistical process control (SPC) and automatic process control.

Prerequisite: BSME or Instructor Consent.

3 units

ME 284. Sensor Technology and Principles

Sensors and principles, including mechanical and magnetic sensors, optical sensors, chemical sensors, and bio sensors; Sensor circuitry, signal characterization and processing; Sensor design, fabrication and applications.

Prerequisite: BSME or Instructor Consent.

3 units

ME 285. Mechatronic Systems Engineering

Introduction of mechatronic systems. Combine hardware, software and system integration. Subjects include basic circuits, logic gates, OpAmps, encoder/decoder, DC and stepper motor, A/D and D/A, C-language, interfacing and control. Hands-on lab practices.

Prerequisite: BSME or Instructor Consent.

Lecture 2 hours/Lab 3 hours.

3 units

ME 295A. Mechanical Engineering Project I

Advanced individual work in mechanical engineering, including but not limited to research, design, development, and simulation studies.

Prerequisites: Admission to Candidacy for Master's Degree in Mechanical Engineering; written proposal approved by instructor and graduate advisor.

3 units

ME 295B. Mechanical Engineering Project II

Continuation of ME 295A. Students complete the in-depth project, write a detailed engineering report and make a comprehensive presentation.

Prerequisite: ME 295A.

3 units

ME 297. Special Topics in Mechanical Engineering

Special topics in Mechanical Engineering. Content varies from semester to semester.

Prerequisite: Instructor Consent.

Repeatable for credit

3 units

ME 298. Special Project in Mechanical Engineering

Advanced individual work in mechanical engineering for Plan B.

Prerequisite: Consent of project advisor.

Repeatable for credit

Credit / No Credit

1-3 units

ME 299. Master's Thesis

Advanced individual work in mechanical engineering for Plan A.

Prerequisite: Consent of thesis advisors.

Repeatable for credit

Credit/No Credit/Report in Progress

3 units

Meteorology

College of Science

Duncan Hall 620
408-924-5200
408-924-5191 (Fax)
www.met.sjsu.edu

Professors

Robert D. Bornstein
Alison F. C. Bridger, Chair
Jindra Goodman

Associate Professors

Eugene C. Cordero
Douglas M. Sinton

Assistant Professors

John Abatzoglou
Craig Clements
Menglin Jin

Curricula

- BS, Meteorology
- Minor, Meteorology
- Minor, Atmospheric and Seismic Hazards
- MS, Meteorology

Meteorology is the study of the atmosphere and its phenomena. It is an integrated physical science with ties to physics, mathematics, chemistry, and computer science. In today's world, we are only just beginning to understand environmental relationships, and knowledge of the role of the atmosphere is critical in these studies. The Department of Meteorology is dedicated to providing that knowledge by preparing students to measure, analyze, model, and predict the state of the atmosphere. This preparation is accomplished through the hands-on nature of the meteorology curriculum for the BS and the MS degrees. At the BS level, theoretical courses in atmospheric hydrodynamics and atmospheric physics are balanced by practical laboratory work involving weather analysis and forecasting, as well as meteorological programming, remote sensing and statistics. BS students also learn techniques of verbal, written, and electronic communication for meteorologists. The BS degree culminates with a practical senior thesis project that introduces the student to research and its presentation. The completion of the BS degree presents many employment opportunities, including:

- Environmental Consultant
- Forecaster
- Media Specialist
- Air Pollution Specialist
- High School Science Teacher
- Environmental Programmer
- Graduate School

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.

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. 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 meteorology faculty has a wide range of expertise, including cloud and aerosol physics, urban meteorology and pollution, meteorological modeling and measurements, radar and satellite meteorology, tropical meteorology, aviation meteorology, atmospheric hydrodynamics, weather analysis and prediction, atmospheres of other planets, global climatic change, meteorological data processing, data communications, data acquisition and data 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 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

This four-year program is designed to develop meteorologists who, upon graduation, are ready to begin professional practice in industry or government or 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** 52

METR 010, METR 040, METR 050, METR 051, METR 061, METR 100W, METR 121A, METR 121B, METR 123, METR 124, METR 125, METR 136, METR 163, METR 170A, METR 170B, METR 171A, METR 171B and METR 172 (47); METR 179 (2); METR 131, METR 150, METR 160 or METR 185 (3)

Supporting Courses Required 32

CHEM 001A (5); MATH 030, MATH 031, MATH 032 and MATH 133A (15); PHYS 050, PHYS 051 and PHYS 052 (12)

Total Units Required 125

A minimum grade of "C–" must be attained in all major and supporting courses.

Minor – Meteorology

This minor is designed to prepare science and engineering students to solve interdisciplinary problems involving the atmospheric sciences.

Semester Units

Required Courses 14

METR 010, METR 051, METR 061, METR 170A and METR 170B (11); 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 17**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

Some majors require a minor of more than 13 units.

MS – Meteorology**Requirements for Admission to Classified Standing**

Minimum requirements for admission to the Graduate Division are outlined in the Admissions section of this catalog. In addition, for classified standing, the student must have the equivalent of a San José State University Bachelor of Science degree in Meteorology or, with the approval of the department graduate committee, a degree in a physical science or mathematics.

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.

Requirements for Admission to Candidacy

In addition to the requirements set forth in the Academic Requirements section of this catalog, the student must possess an adequate background in meteorology. Competence in the general areas covered by METR 100W, 121A, 124, and either 61 or 171A (to be decided in consultation with the department graduate committee), 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"; or passage of a comprehensive written examination. Students should consult with the graduate advisor concerning these alternatives.

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.

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 be 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 160, METR 163, METR 171B, METR 172, 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

Courses**METEOROLOGY****LOWER DIVISION****METR 001B. Introduction to Global Studies**

See GLST 001B.

3 units

METR 010. Weather and Climate

A descriptive introduction to the atmosphere, with emphasis on weather phenomena, climate, climate change, forecasting and air pollution.

GE: B1

3 units

METR 040. Weather Seminar

Meteorology program planning; careers in Meteorology; a survey of major problems in the atmosphere; faculty research programs; department, college and university resources, survival in the university; strategies for success.

Repeatable for credit

Credit / No Credit

1 unit

METR 050. Scientific Computing I

Computer systems and programming, emphasizing solution of problems in atmospheric sciences. Includes computer systems, flow diagrams, UNIX and C FORTRAN programming, mass data handling and formatting.

Prerequisite: MATH 32 or instructor consent.

Lecture 1 hour/Lab 3 hours.

2 units

METR 051. Scientific Computing II

Computer systems and C programming, and UNIX, emphasizing solution of problems in atmospheric sciences. Includes computer systems, flow diagrams, advanced programming, mass data handling and formatting.

Prerequisite: METR 50 (or equivalent) or instructor consent.

Lecture 1 hours/lab 3 hours.

2 units

METR 061. Introduction to Meteorology

A quantitative introduction to atmospheric science for meteorology majors.

Prerequisite: MATH 32.

Corequisite: MATH 133A, PHYS 51 or instructor consent.

Lecture 3 hours/lab 3 hours.

4 units

UPPER DIVISION**METR 100W. Writing Workshop: Meteorological Reports**

Introduction to scientific writing, research methods and preparation of technical reports in the meteorology field.

Prerequisite: ENGL 1B (with a grade of C or better); Completion of core GE, satisfaction of Writing Skills Test and upper division standing.

Corequisite: METR 121A or instructor consent.

ABC/No Credit

GE: Z

3 units

METR 110. Aviation Meteorology

Introduction to meteorology with emphasis on aviation applications.

Lecture 2 hours/lab 3 hours.

3 units

METR 112. Global Climate Changes

Formation and evolution of the atmosphere.

Climate changes in the Earth's past. Interactions between climate and life. Anthropogenic climate change.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing.

For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: R

3 units

METR 113. Atmospheric Pollution

Descriptive discussion of the sources, effects and fates of pollutants in the atmosphere. Interaction of pollutants and weather systems, including acid precipitation, ozone destruction; air pollution policy and regulations.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing.

For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: R

3 units

METR 120A. Laboratory Electronics for Scientists I

See PHYS 120A.

3 units

METR 120I. Laboratory Electronics for Scientists II: Instrumentation

See PHYS 120I.

3 units

METR 121A. Dynamic Meteorology

Theoretical examination of the motion and behavior of the atmosphere. Governing equations and applications; vorticity; waves; numerical prediction; baroclinic instability.

Prerequisite: METR 51, METR 61, MATH 133A.

Year course.

3 units

METR 121B. Dynamic Meteorology

Theoretical examination of the motion and behavior of the atmosphere. Governing equations and applications; vorticity; waves; numerical prediction; baroclinic instability.

Prerequisite: METR 121A.

Year course.

3 units

METR 123. Advanced Climatology

The physical basis of climate with emphasis on the theory of global warming.

Prerequisite: METR 61.

3 units

METR 124. Thermodynamics and Radiation

Theory of atmospheric radiation and thermodynamics.

Prerequisite: METR 61 and CHEM 1A or instructor consent.

3 units

METR 125. Physical Meteorology

Cloud and precipitation physics, atmospheric electricity, optics and acoustics.

Prerequisite: METR 124 or instructor consent.

3 units

METR 130. Boundary Layer Meteorology

Structure of the atmospheric planetary boundary layer with applications to air pollution, agriculture and cities; meso-circulations such as sea breeze.

Prerequisite: METR 121B or instructor consent.

Repeatable for credit

3 units

METR 131. Air Pollution Meteorology

Quantitative description of contaminants in the atmosphere: sources, dispersion and sinks; their effects on atmospheric energy balance and condensation.

Prerequisite: METR 121B or instructor consent.

Repeatable for credit

3 units

METR 136. Empirical Techniques in Meteorology

Applications of statistical methods to analysis of meteorological and climatological data; use of the internet to obtain climate data; objective forecasting methods; elementary decision theory; data analysis using contemporary computer software.

Prerequisite: METR 61.

Lecture 2 hours/lab 3 hours.

3 units

METR 143C. Numerical Analysis and Scientific Computing

See MATH 143C.

3 units

METR 150. Computers in Meteorology III

Computer applications to advanced problems in atmospheric science, including specialized computer systems, mass data handling, weather data communications.

Prerequisite: MATH 43, METR 51 or instructor consent.

Lecture 2 hours/lab 3 hours.

Offered only occasionally.

3 units

METR 160. Tropical Meteorology

Local and diurnal variations in tropical weather; mean and synoptic fields of meteorological parameters in the tropics; general circulation; hurricanes; monsoons.

Prerequisite: METR 121B.

Offered on an irregular basis only.

Repeatable for credit

3 units

METR 163. Remote Sensing

Meteorological measurement techniques and equipment; theory of instruments.

Prerequisite: METR 61.

Lecture 2 hours/lab 3 hours.

3 units

METR 168. Global Climate Change I

See COMM 168.

6 units

METR 168W. Global Climate Change II

See COMM 168W.

ABC/No Credit

GE: R+S+V+Z

3 units

METR 170A. Weather Briefing

Weather briefing associated with Meteorology 121A,B.

Corequisite: METR 121A

Lab 3 hours.

Year course 1 unit each semester.

Credit / No Credit

1 unit

METR 170B. Weather Briefing

Weather briefing associated with Meteorology 121A,B.

Corequisite: METR 121B.

Lab 3 hours.

Credit / No Credit

1 unit

METR 171A. Synoptic Weather Analysis and Forecasting

Structure and behavior of atmospheric circulation systems, practical weather analysis and forecasting techniques. Acquisition, manipulation and display of real-time data sets, verbal presentations of weather analyses and forecasts.

Prerequisite: METR 100W, METR 121B or instructor consent.

Pre/Corequisite: METR 125

Lecture 1 hour/lab 6 hours each semester.

Year course.

3 units

METR 171B. Synoptic Weather Analysis and Forecasting

Structure and behavior of atmospheric circulation systems, practical weather analysis and forecasting techniques. Acquisition, manipulation and display of real-time data sets, verbal presentations of weather analyses and forecasts.

Prerequisite: METR 171A

Lecture 1 hour/lab 6 hours each semester.

3 units

METR 172. Mesoscale Meteorology

Structure and behavior of mesoscale atmospheric circulations, practical weather forecasting techniques.

Prerequisite: METR 171A.

Repeatable for credit

3 units

METR 179. Senior Thesis

Supervised research and the preparation of a senior thesis.

Prerequisite: METR 100W.

Pre/Corequisite: METR 171A (first semester) METR 171B (second semester).

Repeatable for credit

Credit / No Credit

1 unit

METR 180. Individual Studies

Independent work on topics by special arrangement. A maximum of four units may be repeated.

Prerequisite: Meteorology major or minor.

Repeatable for credit

Credit / No Credit

1-4 units

METR 182. Tutor Assistant in Meteorology

Supervised instructional experience as a tutor assistant. A maximum of four units may be repeated.

Prerequisite: Upper division standing and instructor consent.

Repeatable for credit

Credit / No Credit

1 unit

METR 185. Special Topics

Selected topics in meteorology. Topics vary and are announced each semester.

Prerequisite: METR 121B.

Repeatable for credit

1-3 units

GRADUATE**METR 202. Research Methods in Meteorology**

The nature of research in meteorology with particular reference to formulation of the problem, methods of attack and presentation of results. Proposal writing and selection of MS thesis topic.

Prerequisite: Instructor consent.

Offered on an irregular basis only.

3 units

METR 205A. Advanced Atmospheric Dynamics I

Dynamics of synoptic- and large-scale flows. Quasi-geostrophic theory and applications to mid-latitude storms; atmospheric waves; barotropic and baroclinic instabilities; energetics of atmospheric systems; wave-mean flow interactions; dynamics of the general circulation; tropical and stratospheric dynamics.

Prerequisite: METR 121B.

3 units

METR 205B. Advanced Atmospheric Dynamics II

Advanced topics in dynamic meteorology. Observations and theory of the structure and behavior of large-scale waves; atmospheric tides; dynamics of planetary atmospheres; dynamics of hurricanes; application of chaos theory to atmospheric dynamics.

Prerequisite: METR 205A or instructor consent.

3 units

METR 206. Advanced Synoptic Meteorology

Structure and theory of the observed features of atmospheric circulation regimes. Dynamical and thermodynamical interpretation of various scales of disturbances; application of numerical weather analysis and prediction methods; use of satellite data.

Prerequisite: METR 171B (or equivalent).

Offered on an irregular basis only.

Repeatable for credit

3 units

METR 208. Turbulence

Properties of turbulence in the atmosphere; theories of boundary layer; turbulent flux of heat, momentum and mass in the atmosphere.

Prerequisite: METR 130 or satisfactory background in fluid mechanics.

Offered on an irregular basis only.

Repeatable for credit

3 units

METR 215. Advanced Physical Meteorology

Thermodynamics of moist air; nucleation processes; particulates in air, microphysics and cloud dynamics, sampling techniques.

Prerequisite: METR 125 (or equivalent).

3 units

METR 220. Biometeorology

Interrelationships between plants and animals and their physical environment; techniques of biometeorological measurements and instrumentation in both artificial and natural environments; methods of forecasting and controlling the biosphere.

Prerequisite: Instructor consent.

Offered on an irregular basis only.

Repeatable for credit

3 units

METR 224. The Upper Atmosphere

Physical and chemical processes of the air above the troposphere; aeronomy, with emphasis on radiation and rocket and satellite measurements.

Prerequisite: METR 121B and METR 125 (or equivalent).

Offered on an irregular basis only.

Repeatable for credit

3 units

METR 240. Numerical Modeling

Numerical analysis and prediction in meteorology. Numerical methods and their errors; finite-difference and spectral methods; atmospheric models.

Prerequisite: METR 50 (or equivalent); METR 205A or instructor consent.

3 units

METR 245. Mesoscale Modeling

Formulation and solution techniques for numerical models of the polluted atmospheric boundary layer, including meso-circulations such as sea breezes.

Prerequisite: METR 130 and METR 240.

Repeatable for credit

3 units

METR 245L. Mesoscale Modeling Lab

Experience porting, compiling, initializing and running mesoscale models, data analysis and visualization.

Prerequisite: METR 245.

1 unit

METR 280. Recent Developments in Meteorology

Intensive study of a particular topic in the atmospheric sciences with special emphasis on recent research results, such as instrumentation or modeling techniques. Topics vary and are announced each semester.

Prerequisite: Instructor consent.

Repeatable for credit

1-3 units

METR 285. Colloquium

Advanced studies in special fields, including original work by faculty, guest speakers and graduate students. One presentation required of each enrolled student and attendance required for all graduate students.

Prerequisite: Instructor consent.

Repeatable for credit

Credit/No Credit/Report in Progress

1 unit

METR 298. Research

Supervised individual laboratory or field work.

Prerequisite: Instructor consent.

Repeatable for credit

Credit / No Credit

1-4 units

METR 299. Master's Thesis or Project

Prerequisite: Admission to candidacy for the MS degree and approval of topic by thesis advisor.

Repeatable for credit

Credit/No Credit/Report in Progress

1-6 units

Mexican American Studies

College of Social Sciences

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408-924-5760

Professors

Louis Holscher

Associate Professors

Marcos Pizarro, Chair

Assistant Professors

Julia Curry-Rodriguez
Magdalena Barrera

Curricula

- Minor, Mexican American Studies
- MA, Mexican American Studies

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 coursework 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 Studies and Research website at www.sjsu.edu/gradstudies. 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	18
MAS 200, MAS 205, MAS 210, MAS 225, MAS 240 and MAS 275	
Emphasis Sequence	12
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)	
Emphasis in Comparative Ethnic Studies	30
Core Courses	18
MAS 200, MAS 205, MAS 210, MAS 225, MAS 240 and MAS 275	
Emphasis Sequence	12
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)	
Emphasis in Policy Studies	30
Core Courses	18
MAS 200, MAS 205, MAS 210, MAS 225, MAS 240 and MAS 275	
Emphasis Sequence	12
Choose one sequence: MAS 215, MAS 230, MAS 252; MAS 298 (Project) or elective; or MAS 215 or MAS 252, MAS 230, MAS 298 (Project) and MAS 299 (Thesis)	

Total Units Required 30

Courses

MEXICAN AMERICAN STUDIES

LOWER DIVISION

MAS 010A. Mexican Americans and the Development of U.S. History and Government

The American people and institutions from various ethnic points of view. Historical similarities and differences of various groups that make up the U.S. and its historical/political institutions. From pre-Columbian times to 1865.

Note: Entire sequence satisfies GE Areas D2,3; F1,2,3.
GE: M6
3 units

MAS 010B. Mexican Americans and the Development of U.S. History and Government

The American people and institutions from various ethnic points of view. Historical similarities and differences of various groups that make up the U.S. and its historical/political institutions. From 1865 to the present.

Note: Entire sequence satisfies GE Areas D2,3; F1,2,3.
GE: M7
3 units

MAS 025. The Changing Majority: Power and Ethnicity in America

Comparative and historical analysis of racial minorities. Focus on Euro American response to American Indians, Asian Americans, African Americans and Mexican Americans to provide understanding of minority experience in the U.S. as well as American culture.

GE: D2
3 units

MAS 040. The Chicano Theatre (El Teatro Chicano)

Prerequisite: ENGL 1A or instructor consent.
Lecture 1 hour/activity 2 hours.
Repeatable for credit
3 units

MAS 074. Public Address

Techniques of effective oral communication. Principles of rhetoric through analysis and critique of contemporary issues concerning Mexican Americans.

GE: A1
3 units

UPPER DIVISION

MAS 105. Chicanos: United States/Mexico Relations

Exploration of U.S./Mexico relations through the Chicana/o perspective. Emphasis is on both historical and contemporary issues.

3 units

MAS 115. Chicana/o Families

Examines Mexican and Mexican American families from the 19th to the 21st century. Special attention is given to the diversity of family structures in terms of incorporation, settlement, and socio-cultural interfacing within group and with diverse race/ethnic communities.

Prerequisite: Upper division standing.
3 units

MAS 120. Political Economy and Chicana/o Communities

Analysis of the American political and economic systems and institutions and their inter-connections from a Chicana/o perspective. Focus on the changing roles of Chicanas/os in the U.S. and global economies and political processes.

Prerequisite: Upper division standing.
3 units

MAS 125. Chicana/o Community Studies

Examination of Chicana/o community activities, including organizations and contemporary issues.

3 units

MAS 127. Chicanas/os and the Criminal Justice System

Crime, delinquency and the interaction between Chicano/Latino communities and the criminal justice system. The roles of government agencies, local law enforcement, the courts and corrections.

Prerequisite: Upper division standing or instructor consent.
3 units

MAS 130. Chicanas and Chicanos in American Society

Analysis of the Chicana/o community and its role in US society, emphasizing understanding social change. Covers critical areas of the Chicana/o experience, including: family, politics, gender and sexual orientation, education, immigration, identity, institutional racism and discrimination, class, and environmental justice.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: S
3 units

MAS 135. Contemporary Chicana/o Issues

Analysis of selected issues/topics involving Chicano/Latino communities. May be repeated with different topic/issue.

Prerequisite: ENGL 1A or instructor consent.
Repeatable for credit
3 units

MAS 144. Chicana/o Literature

An examination of selected Chicana/o literature including poetry, short stories, essays, and novels. May be repeated with different topic.

Prerequisite: ENGL 1A or instructor consent.
Repeatable for credit
3 units

MAS 150. Research Methods

A survey of research methods used in Chicana/o studies that address issues in Chicana/o communities.

Prerequisite: ENGL 1A and MAS 130.
Offered only occasionally.
3 units

MAS 160. Gender and Sexuality in Chicana/o Community

An examination of how patriarchy, race, and class shape Chicanas in their everyday lives in American society. It explores how women resist and challenge the limitations placed on them as a result of being women and members of a racial/ethnic group.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: S
3 units

MAS 170. Hollywood's Image of Chicanas/Chicanos

Analysis of Hollywood's contribution, through cinema, to shaping the socio-political relations between Chicanas/os and the dominant society, plus the use of traditional ideological concepts in promoting stereotyped images of Chicanas/os.

Prerequisite: ENGL 1A and ENGL 1B or instructor consent.
3 units

MAS 175. Human Migrations: Global Reach

Examines Mexican immigration to the United States within the context of global movements as both historical and contemporary phenomena. Considers social, political, cultural, and economic forces that influence immigration.

Prerequisite: Upper division standing.
3 units

MAS 180. Individual Studies

Individual research projects and field activities.

Prerequisite: Upper division standing and instructor consent.
Repeatable for credit
Credit / No Credit
1-4 units

MAS 185. Teaching in a Diverse Society

See SOCS 185.

3 units

MAS 194. Peoples of Color in the Making of the Americas: 1400-1850

See AAS 194.

3 units

MAS 195. Peoples of Color in the Making of the Americas: 1850-Present

See AAS 195.

3 units

GRADUATE

MAS 200. Ideology and the Chicana/o Experience

Seminar examining the ideological and philosophical forces that shape Chicana/o experiences and identities.

3 units

MAS 205. Chicana/o History

Seminar exploring the historical experiences of Chicanas/os, from the indigenous past to the present. Integrates historiography, as it is grounded in an analysis of the development of and changes in the field of Chicana/o history.

3 units

MAS 210. Foundations of Chicana/o Studies

An analysis of the evolution of Chicana/o thought and intellectual production and the development of the field of Chicana/o Studies. Analyzes the basic constructs and theories underlying Chicana/o Studies, from early works to the present.

3 units

MAS 215. Chicanas/os and Education

Focus is on key educational issues facing Chicanas/os both historically and currently, including policy, curriculum, cultural conflict, and the different efforts to address them.

3 units

MAS 225. The Impact of American Institutions on the Chicana/o Community

Seminar analyzing the impact of social, political, economic, and cultural systems on Chicana/o communities.

3 units

MAS 230. Policy Analysis and the Chicana/o Community

Policy analysis focusing on a specific institution or institutions. Emphasis is on analyzing major issues and social policies that affect the Chicana/o community. Effective strategies to affect social change are examined.

Repeatable for credit
3 units

MAS 240. Applied Chicana/o Studies Seminar

Integrates major issues and theories from MAS core courses and applies them to current problems. Includes analyses of the latest research on: politics, economics, gender, immigration, education, community development, sexual orientation, and interethnic conflicts and collaborations.

Prerequisite: MAS core.
Repeatable for credit
3 units

MAS 252. Comparative Ethnic Studies

Interdisciplinary introduction to critical topics and debates in comparative ethnic studies, including race and representation, racialized and gendered labor and citizenship, indigeneity, feminism, nationalism, segregation and environmental injustices.

3 units

MAS 275. Research Methods

Seminar exploring the methodological challenges posed by Chicana/o Studies. The course helps students develop skills in specific research methods of their choice as well as research proposals for the project/thesis, or other areas of post-graduate work.

Prerequisite: Core courses.
3 units

MAS 298. Special Studies

Supervised project with advisor.

Prerequisite: Completion of core courses and written consent of the department's graduate advisor.
Repeatable for credit
Credit / No Credit
1-6 units

MAS 299. Master's Thesis

Supervised thesis.

Prerequisite: Admission to candidacy for master's degree and written consent of the department's graduate advisor.
Repeatable for credit
Credit/No Credit/Report in Progress
3-6 units

Middle East Studies

College of Humanities and the Arts

Clark Hall 419
408-924-1364
408-924-4576 (Fax)

Professors

Mira Z. Amiras, Coordinator
Constantine Danopoulos
Richard E. Keady
Jonathan P. Roth

Associate Professors

Shahin Gerami
Persis M. Karim

Assistant Professors

Shantanu Phukan

Curricula

Minor, Middle East Studies

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, 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	
Electives	6
Complete two of: Art History: MDES 183A or MDES 183B History: MDES 115 or MDES 118 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, 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

Courses

MIDDLE EAST STUDIES

LOWER DIVISION

MDES 070A. Western Religions

See RELS 070A.

GE: C2
3 units

MDES 090. Bible History and Literature

See RELS 090.

GE: C2
3 units

UPPER DIVISION

MDES 106. History of the Holy Land

See HIST 106.

3 units

MDES 108. Jewish Mysticism, Magic and Folklore

See RELS 108.

3 units

MDES 112. Topics in the Bible

See RELS 112.

Repeatable for credit
3 units

MDES 115. Ancient Near East

See HIST 115.

3 units

MDES 118. Byzantine World to 1453

See HIST 118.

3 units

MDES 144. Middle Eastern Politics

See POLS 144.

3 units

MDES 145. Middle Eastern Traditions

See RELS 145.

GE: V
3 units

MDES 152. Visual Culture and Jewish Identity

See ARTH 152.

Repeatable for credit
3 units

MDES 153. Jews, Zionism, and the State

See RELS 153.

3 units

MDES 154. History of the Jews

See HIST 154.

3 units

MDES 156. Islam, Politics and the West

See RELS 156.

3 units

MDES 157. Islamic Cultures

See RELS 157.

3 units

MDES 180. Individual Studies

See RELS 180.

Repeatable for credit
Credit / No Credit
1-4 units

MDES 183A. Art of Egypt and Mesopotamia

See ARTH 183A.

3 units

MDES 183B. Art of Islam-Early Islam to the Seljuks

See ARTH 183B.

3 units

MDES 183C. Art of Islam 13th-19th Century

See ARTH 183C.

3 units

MDES 184. Directed Reading

See RELS 184.

Repeatable for credit
Credit / No Credit
1-4 units

Military Science (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
408-554-2139 (Fax)

Professors

Shawn Cowley

Assistant Professors

Michael Regnier
Sara Stitt

Curricula

Minor, Military Science

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 130A-C, and 140A-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.	
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.	
MILS 130A, MILS 130B (4/4), MILS 140A and MILS 140B (4/4)	
Total Units Required	16-24

Courses

MILITARY SCIENCE

LOWER DIVISION

MILS 001A. Introduction to ROTC

Team study and activities in basic drill, physical fitness, rappelling, leadership reaction course, first aid, making presentations and basic marksmanship. Fundamental concepts of leadership in classroom and outdoor laboratory environments.

2 units

MILS 001B. Basic Military Skills

Introduces basic leadership concepts and military skills. Physical fitness training sessions offered 5 times each week and participation in a weekend exercise away from the university is encouraged.

2 units

MILS 002A. Individual/Team Military Tactics

Ethics-based leadership skills developing individual abilities which contribute to effective team building. Introduction to individual/team aspects of military tactics in small unit operations. Oral and written communication skills, movement techniques, first aid and land navigation.

2 units

MILS 002B. Small Unit Leadership

Preparation for ROTC Advanced Course. Focus is on leadership principles, basic rifle marksmanship, planning for team safety/security and methods of pre-execution checks. Topics include orientation to branches of the Army, troop leading procedures, combat orders, stress management and self-confidence skills.

2 units

MILS 002C. Leader's Training Course (LTC)

Four week summer camp in Kentucky. Travel, lodging, most meal costs defrayed by Army. No military obligation incurred. Open to sophomores and juniors who have not taken ROTC courses during regular school year.

Physical Exam required (paid for by ROTC).

Credit / No Credit

4 units

UPPER DIVISION

MILS 130A. Leading Small Organizations

Series of practical opportunities to lead small groups, receive personal assessments and lead again in increasingly complex situations. Leadership lab, three one-hour physical fitness sessions per week and participation in weekend exercise required.

4 units

MILS 130B. Advanced Tactics

Performance-oriented study of small unit tactics, leadership and decision-making process with emphasis on problem solving. Students give oral presentations on military subjects. Leadership lab, three one-hour physical fitness sessions per week and participation in a weekend exercise required.

4 units

MILS 130C. Leader Development and Assessment Course (LDAC)

Five week camp in Washington State. Pay with travel, lodging and most meal costs defrayed by Army. Structured environment stressing leadership under varying circumstances. Leadership/skills evaluations weigh heavily in determining commissioning type and post graduate opportunities.

Credit / No Credit

4 units

MILS 140A. Leadership Challenges and Goal-Setting

Aspects of tradition and law relating to leadership as an Army officer. Assess organizational cohesion, develop strategies and skills to lead people and manage resources. Leadership lab, three one-hour physical fitness sessions per week and participation in a weekend exercise required.

4 units

MILS 140B. Precommissioning Seminar

Continuous development of leadership and critical thinking skills with identification and resolution of ethical dilemmas, counseling, motivational techniques, ethics, military justice and the Army Supply System. Leadership lab, three one-hour physical fitness sessions per week and participation in a weekend exercise required.

4 units

MILS 180. Individual Studies

Individual work on special topics by arrangement.

Prerequisite: Instructor consent and Military Science Chair approval.

Repeatable for credit

Credit / No Credit

1-4 units

MILS 199. American Military History

A survey of diplomatic, international, military and economic aspects of American involvement in conflicts from the Anglo-Indian Wars to present time. Study of leadership, weapons technology, politics, humanitarian operations and critical thinking.

Prerequisite: Upper division standing.

3 units

Music and Dance

College of Humanities and the Arts

Music 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

Daniel N. Wyman

Assistant Professors

Kathryn Adduci

Gordon Haramaki

Diana M. Hollinger

Aaron J. Lington

Gwendolyn Mok

Amanda Quist

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

■ Minor, Music

■ Minor, Dance

■ MA, Music

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 coursework 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:

- Credentialled 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 coursework 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.

- 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.
- 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.
- 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.
- 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.
- 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.

- 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.
- 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.
- 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.
- See School of Music and Dance Undergraduate Handbook for additional detailed policies.

Policies and Basic Requirements for Dance Majors

- 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.
- 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 Requirements45

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 Education2

Core Courses40

Lower Division30

MUSC 001A, MUSC 001B, MUSC 002A, MUSC 002B, MUSC 003A, MUSC 009, MUSC 012, MUSC 013, MUSC 019, MUSC 025A and MUSC 025B (20); MUSC 029, MUSC 030, MUSC 031, MUSC 032, MUSC 033, MUSC 034, MUSC 035, MUSC 036, MUSC 036A, MUSC 037 or MUSC 038A (4); MUSC 150A, MUSC 152, MUSC 153, MUSC 154, MUSC 157, MUSC 158, MUSC 159 or MUSC 160F (4); MUSC 040A (2)

Upper Division10

The upper division courses are limited to participation in ensembles and available to lower division students. See the Music Advisor for details.

MUSC 110, MUSC 111, MUSC 120 and MUSC 182

Additional Courses in Music10

Take 10 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.

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 140B, MUSC 140C, MUSC 148A, MUSC 148B, MUSC 148C

Music Technology

MUSC 160S (maximum of 2 units of MUSC 160S), MUSC 167, MUSC 168, MUSC 169, MUSC 170A, MUSC 170B

Beginning Methods and Techniques

MUSC 026A, MUSC 041A, MUSC 041B, MUSC 125A, MUSC 125B, MUSC 125C, MUSC 125D

Applied Lessons

Maximum of two units by special request from director and passing of junior qualifying exam.
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.

MUSC 160A, MUSC 160D, MUSC 160F, MUSC 160H, MUSC 160J, MUSC 160K, MUSC 160L, MUSC 160M

Ensembles

Maximum of four units. Two units required as corequisite for those receiving applied lessons. Additional units may be counted as electives.
MUSC 150A, MUSC 153, MUSC 154, MUSC 157, MUSC 158, MUSC 159, MUSC 160F

Capstone Project3

One of the following: undergraduate thesis, lecture/demonstration, or an appropriate project approved by the Director.

General Electives or Minor23

All units outside of area required.

Total Units Required120

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).
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 160S, MUSC 166, MUSC 168, MUSC 169, MUSC 170B, MUSC 170C (0-2)

Electives.....8-10

Total Units Required132

**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).
MUSC 019, MUSC 100W and MUSC 120

Requirements in the Major.....69**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 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,

MUSC 110, MUSC 111, MUSC 130, MUSC 133,

MUSC 134, MUSC 135, MUSC 136, MUSC 136A, MUSC 137 or MUSC 138A (4); MUSC 148A (4)

Jazz Studies Concentration.....23

MUSC 102, MUSC 104, MUSC 106A, MUSC 106B, MUSC 140B, MUSC 140C, MUSC 148B, MUSC 167, MUSC 170A and MUSC 182

Electives.....8-10

Total Units Required132

**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.

Voice Emphasis.....14

See language requirement under Policies:

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 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 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 Required132

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.	
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
Preparation for the Major	3
DANC 010 or MUSC 010A (3)	
Requirements in the Major	53
Dance Technique and Performance	25
Minimum of one technique class daily required each semester at SJSU (new students will audition for placement in various technique classes. Level I is prerequisite if unable to perform at Level II or higher in Modern, Ballet, or Jazz).	
Concentrated Areas of Technique	18
Primary Area (Level IIa or III)	8
Secondary Area (Level IIa or III)	6
Third Area (Level II or IIa or III)	4
Additional Technique	2
DANC 049A or DANC 049B (1) and DANC 153 (1)	
Performance and Dance Electives	5
Performance	1-3
DANC 112 (2)	
DANC 194A	
DANC 194B (1)	
Theory	28
DANC 075, DANC 144A, DANC 144B, DANC 145A, DANC 145B, DANC 145C, DANC 146, DANC 147, DANC 150, DANC 152 and DANC 186 (27); Two half-units of DANC 194A (1) (each half unit represents crew responsibilities for one production)	
Support for the Major	6
DANC 102 and MUSC 100W	
Electives	16
Total Units Required	120

Minor – Dance

	Semester Units
Core	5
DANC 010, DANC 144A or DANC 144B (3); DANC 145A (2)	
Technique Paths	6
Complete six units of any combination of beginning, intermediate or advanced courses in Ballet, Jazz or Modern (all courses are 2 units) or beginning or intermediate Tap (1 unit each). At least 2 units must be intermediate level.	
Electives	9
Complete nine units from: DANC 075, DANC 102, DANC 112, DANC 145B, DANC 145C, DANC 147, DANC 148, DANC 150, DANC 152, DANC 153, DANC 186, DANC 194A, DANC 194B	
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 Studies and Research website at www.sjsu.edu/gradstudies. 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).

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 160B, MUSC 160D, MUSC 160E, MUSC 160F, MUSC 160H, MUSC 160J, MUSC 160K, MUSC 160L, MUSC 160M, MUSC 160S (repeatable for credit)	
Music Support Courses	9
MUSC 010A, MUSC 012 or MUSC 019 (3); <i>Upper division courses must be completed at SJSU: MUSC 110, MUSC 111, MUSC 112, MUSC 116, MUSC 117, MUSC 120, MUSC 124, MUSC 125A, MUSC 125B, MUSC 125C, MUSC 125D, MUSC 167, MUSC 168, MUSC 169, MUSC 170A, MUSC 170B, MUSC 170C or MUSC 185A (3)</i>	
Total Units Required	18

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:

- 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.
- 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 Required30

Courses

DANCE

LOWER DIVISION

DANC 010. Dance Appreciation

A survey of dance as art in the Western world. The course examines the diversity of people, cultures and events that led to the development of Ballet, Modern, Jazz, Tap and Musical Theatre Dance.

GE: C1

3 units

DANC 040A. Modern Dance I

Activity 4 hours.

One unit may be used one time towards the two unit Physical Education graduation requirement.

Repeatable for credit

2 units

DANC 040B. Modern Dance II

Prerequisite: DANC 40A (or equivalent).

Activity 4 hours.

One unit may be used one time towards the two unit Physical Education graduation requirement.

Repeatable for credit

2 units

DANC 041A. Ballet I

Activity 4 hours.

Note: One unit may be used one time towards the two unit Physical Education graduation requirement.

Repeatable for credit

2 units

DANC 041B. Ballet II

Prerequisite: DANC 41A (or equivalent).

Activity 4 hours

One unit may be used one time towards the two unit Physical Education graduation requirement.

Repeatable for credit

2 units

DANC 042A. Jazz Dance I

Activity 4 hours.

One unit may be used one time towards the two unit Physical Education graduation requirement.

Repeatable for credit

2 units

DANC 042B. Jazz Dance II

Prerequisite: DANC 42A (or equivalent).

Activity 4 hours.

One unit may be used one time towards the two unit Physical Education graduation requirement.

Repeatable for credit

2 units

DANC 044. Line/Country Western Dance

See KIN 044.

1 unit

DANC 045A. Beginning Lindy Hop and Night Club Swing

See KIN 045A.

1 unit

DANC 046A. Beginning Social Dance

See KIN 046A.

Repeatable for credit

1 unit

DANC 046B. Intermediate Social Dance

See KIN 046B.

Repeatable for credit

1 unit

DANC 048A. Beginning Latin Dance

See KIN 048A.

Repeatable for credit

1 unit

DANC 048B. Intermediate Latin Dance

See KIN 048B.

Repeatable for credit

1 unit

DANC 049A. Tap Dance I

May be taken only once for physical education graduation requirement.

Activity 3 hours.

Repeatable for credit

1 unit

DANC 049B. Tap Dance II

May be taken only once for physical education graduation requirement.

Prerequisite: DANC 49A (or equivalent).

Activity 3 hours

Repeatable for credit

1 unit

DANC 075. Rhythmic Fundamentals for the Dance

Basic music theory and the relationship of dance and music.

Lecture/activity 3 hours.

2 units

UPPER DIVISION

DANC 102. Dance in World Cultures

Survey of dance in selected world cultures; the role of dance in society; consideration of style, historical background and religious/cultural influences. Included are: Caribbean, West African, Mexican, Balkan, European, Asian and American cultures.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: V

3 units

DANC 112. Dance Rehearsal and Performance

Production of choreographic works; reconstruction of historically significant dance master works; development of small performing company; public performances.

Prerequisite: Audition.

Lab hours required.

Repeatable for credit

Credit / No Credit

2 units

DANC 140A. Modern Dance IIA

Technique and performance of advanced Intermediate Modern Dance for the Modern Dancer.

Prerequisite: DANC 40B.

One unit may be used one time towards the two unit Physical Education graduation requirement.

Repeatable for credit

2 units

DANC 140B. Modern Dance III

Technique and performance of advanced modern dance for the advanced dancer.

Prerequisite: DANC 40A or DANC 140A.

Activity 6 hours.

Repeatable for credit

2 units

DANC 141A. Ballet IIA

Prerequisite: DANC 41B.

Activity 4 hours.

One unit may be used one time towards the two unit Physical Education graduation requirement.

Repeatable for credit

2 units

DANC 141B. Ballet III

Technique and performance of advanced ballet for the advanced dancer.

Prerequisite: DANC 41B, DANC 141A or instructor consent.

Activity 6 hours.

One unit may be used one time towards the two unit Physical Education graduation requirement.

Repeatable for credit

2 units

DANC 142A. Jazz Dance IIA

Techniques and performance of advanced Intermediate Jazz Dance for the advanced Intermediate Jazz Dancer.

Prerequisite: DANC 42B.

One unit may be used one time towards the two unit Physical Education graduation requirement.

Repeatable for credit

2 units

DANC 142B. Jazz Dance III

Technique and performance of advanced jazz dance for the advanced dancer.

Prerequisite: DANC 42B or DANC 142A.

Lab 6 hours.

One unit may be used one time towards the two unit Physical Education graduation requirement.

Repeatable for credit

2 units

DANC 144A. Dance History and Repertory

History of dance and dances from ancient time to the court of King Louis XIV. Selected repertory works.

Prerequisite: Upper division standing.

Lecture 2 hours/activity 3 hours.

3 units

DANC 144B. Dance History and Repertory

History of dance and dances from the court of King Louis XIV through the twentieth century. Selected repertory works.

Prerequisite: Upper division standing.

Lecture 2 hours/activity 3 hours.

3 units

DANC 145A. Choreography I

Presentation and criticism of solo choreography; introduction to improvisational techniques.

Prerequisite: Level II technique standing or instructor consent.

Activity 4 hours.

2 units

DANC 145B. Choreography II

Styles; forms; use of improvisation; presentation and criticism of small group dance.

Prerequisite: DANC 145A.

Activity 4 hours.

2 units

DANC 145C. Choreography III

Practical application of external style in relationship with art from the primitive to contemporary times. Concepts, styles and forms of modern dance in the twentieth century.

Prerequisite: DANC 145B.

Activity 4 hours.

Repeatable for credit

2 units

DANC 146. Dance Production

Practical experience in technical aspects of producing a dance concert.

Prerequisite: Instructor consent.

Lecture 1 hour/activity 3 hours.

Repeatable for credit

2 units

DANC 147. Senior Portfolio

Capstone course entailing final production and evaluation of performance and choreography and submission of written portfolio.

Prerequisite: Upper division standing.

3 units

DANC 148. Children's Dance

Study of dance for children as personal expression through movement. Use of creative dance as a tool for the enrichment of learning. Experiencing dance in a variety of cultures.

Prerequisite: Upper division standing.

Lecture 2 hours/activity 2 hours.

3 units

DANC 149C. Tap Dance III

Technique and performance of advanced tap for the advanced tap dancer. One unit may be used one time towards the two unit Physical Education graduation requirement.

Prerequisite: DANC 49B and instructor consent.

Repeatable for credit

1 unit

DANC 150. Dance Kinesiology

Relationship of structural and mechanical principles of the musculoskeletal system to the analysis of dance performance.

Lecture 2 hours/lab 2 hours.

3 units

DANC 152. Movement Notation

Notating and recording movement; performing notated movement; use of movement as it pertains to the body.

Prerequisite: DANC 40B or DANC 41B or DANC 42B and DANC 75 and instructor consent.

Lecture/activity 4 hours.

3 units

DANC 153. Techniques in World Dance

Traditional or theatrical dance forms selected from one or at the most two specific cultures. Classical ballet, modern, jazz, and tap dance are excluded.

Prerequisite: Upper division standing.

Activity 3 hours.

Repeatable for credit

1 unit

DANC 158. African-Caribbean Dance

See AFAM 158.

2 units

DANC 186. Choreographing the Musical

Study and practice of staging and choreographing musical comedy. Analysis of scripts and choreographic techniques.

Prerequisite: DANC 075 (or equivalent) or instructor consent.

Lecture/activity 3 hours.

2 units

DANC 194A. Activity Projects in Dance

Supervised activity in the regularly-scheduled productions of dance concerts, plays, television programs and operas.

Prerequisite: Audition.

Repeatable for credit

Credit / No Credit

0.5 units

DANC 194B. Activity Projects in Dance

Supervised activity in the technical production aspect of regularly scheduled Dance concerts.

Prerequisite: DANC 146 or instructor consent.

Repeatable for credit

Credit / No Credit

1 unit

DANC 198. Internship in Dance

Supervised internship with approved dance organization. Written evaluation submitted by organizations and student after field work.

Prerequisite: Instructor consent.

Repeatable for credit

Credit / No Credit

1-3 units

MUSIC**LOWER DIVISION****MUSC 001A. Music Systems IA**

First course in a four-semester core sequence of study of analytical systems of music. Topics include rhythm, melody, harmony, timbre, structure, texture, style and contexts for performance and composition.

Prerequisite: Placement examination.

2 units

MUSC 001B. Music Systems IB

First course in a four-semester core sequence of aural skills acquisition, including dictation, sight-singing and analysis.

Prerequisite: Placement examination.

1 unit

MUSC 002A. Music Systems IIA

Second course in a four-semester core sequence of study of analytical systems of music. Topics from MUSC 1A are continued in greater detail with increased complexity.

Prerequisite: MUSC 1A or placement examination.

2 units

MUSC 002B. Music Systems IIB

Second course in a four-semester core sequence of aural skills acquisition, including dictation, sight-singing and analysis.

Prerequisite: MUSC 1B or placement examination.

1 unit

MUSC 003A. Music Systems IIIA

Third course in a four-semester core sequence of study of analytical systems of music. Topics from MUSC 2A are continued in greater detail with increased complexity.

Prerequisite: MUSC 2A or placement examination.

2 units

MUSC 003B. Music Systems IIIB

Third course in a four-semester core sequence of aural skills acquisition, including dictation, sight-singing and analysis.

Prerequisite: MUSC 2B or placement examination.

1 unit

MUSC 004A. Music Systems IVA

Fourth course in a four-semester core sequence of study of analytical systems of music. Topics from MUSC 3A are continued in greater detail and with increased complexity.

Prerequisite: MUSC 3A or placement examination.

2 units

MUSC 004B. Music Systems IVB

Fourth course in a four-semester core sequence of aural skills acquisition, including dictation, sight-singing and analysis.

Prerequisite: MUSC 3B or placement examination.

1 unit

MUSC 006. Jazz Theory

Understanding of traditional jazz nomenclature including chord symbols, chord/scale relationships, and jazz harmony. Various scales, their modes and their applications will be addressed as well as their applications to harmonic progressions common to the jazz idiom.

Prerequisite: MUSC 1A, MUSC 1B, MUSC 25A.
2 units

MUSC 009. Music Fundamentals

Understanding music terminology, fundamental concepts in music theory and techniques in music reading. Required of all music minors. Acceptable as elective credit for music major (as review of fundamentals or for individual instruction in conjunction with applied music study) only with prior advisor approval.

Lecture 2 hours/activity 2 hours.
3 units

MUSC 010A. Music Appreciation

General survey of Western music focusing on recorded and live performances.

GE: C1
3 units

MUSC 010B. Introduction to Music

Beginning piano playing as a means to understanding music. Listening skills developed through exposure to a variety of music: Popular/classical, old/new, Western/non-Western.

GE: C1
3 units

MUSC 012. Fundamentals of Music History

A survey of classical music from the Sumerians to the present. An introduction to the six major periods of music history (Ancient and Medieval, Renaissance, Baroque, Classical, Romantic and Modern) followed by detailed exploration of Ancient, Medieval, and Renaissance periods.

3 units

MUSC 013. Music Technology

Hands-on skills development in music hardware and software, including music integration in word processing and graphics, music notation and Internet/WWW-based research tools for music majors or non-music majors with some music background.

1 unit

MUSC 019. Music in World Cultures

Introduction to music in various cultural contexts outside European classical tradition. Live performances, film, video tapes and slides. Projects involving related arts encouraged.

GE: C1
3 units

MUSC 025A. Piano Proficiency

Skills development in performing four-part harmony; harmonizing melodies in pianistic style, modulation, simple score reading and sight-reading.

Prerequisite: MUSC 9, MUSC 10 (or equivalent).
Repeatable for credit
1 unit

MUSC 025B. Piano Proficiency

25B continuation of 25A.

Prerequisite: MUSC 9, MUSC 10B (or equivalent).
Repeatable for credit
1 unit

MUSC 026A. Voice Fundamentals

Principles of voice production and performance.

Prerequisite: MUSC 9 or MUSC 10B (or equivalent).
1 unit

MUSC 027A. Fundamentals of Jazz Keyboard I

For any instrumental/voice student. Basic skills in jazz keyboard: Chord voicings, symbols, progressions and rhythmic patterns, jazz styles, simple melodic techniques and accompaniment.

Repeatable for credit
1 unit

MUSC 027B. Fundamentals of Jazz Keyboard II

Advanced applications of materials presented in MUSC 27A, including keyboard performance of selected lead-sheet literature; chord symbol recognition, keyboard techniques, chord substitutions introduced, polychords.

Prerequisite: MUSC 27A (or equivalent).
Repeatable for credit
1 unit

MUSC 028. Guitar Fundamentals

The purpose of this course is to develop basic skills and techniques in guitar playing, applicable to various types of music and teaching.

Prerequisite: Ability to read music.
Repeatable for credit
1 unit

MUSC 029. Electro-Acoustics

Incorporating current music technology and instrumentation in creating works and projects. Required each semester of lower division electro-acoustic majors.

Repeatable for credit
1-2 units

MUSC 030. Piano

Required each semester of lower division piano majors.

Prerequisite: Previous keyboard experience; music minors with instructor consent.
Repeatable for credit
1-2 units

MUSC 031. Harpsichord

Required each semester of lower division harpsichord majors.

Prerequisite: Evidence of keyboard experience or instructor consent.
Repeatable for credit
1-2 units

MUSC 032. Organ

Required each semester of lower division organ majors.

Prerequisite: MUSC 30, previous keyboard experience or instructor consent.
Repeatable for credit
1-2 units

MUSC 033. Voice

Required each semester of lower division voice majors. Study and development of vocal techniques and performance of representative repertoire from principal periods in music. Includes compositions embracing the English, Italian, French and German languages.

Prerequisite: MUSC 9B or MUSC 10B (or equivalent).
Repeatable for credit
1-2 units

MUSC 034. Strings

Required each semester of lower division string majors.

Repeatable for credit
1-2 units

MUSC 035. Woodwinds

Required each semester of lower division woodwind majors.

Repeatable for credit
1-2 units

MUSC 036. Brass

Required each semester of lower division brass majors.

Repeatable for credit
1-2 units

MUSC 036A. Vocal-Instrumental Improvisation

Private vocal and instrumental studio lessons. Improving performing skills, soloing, reading lead sheets, musical styles, with emphasis on developing a personal sense of musicality and styles.

Prerequisite: Instructor consent.
Repeatable for credit
1 unit

MUSC 037. Percussion

Required each semester of lower division percussion majors.

Repeatable for credit
1-2 units

MUSC 038. Composition

Required each semester of lower division composition majors. Works created incorporating traditional and twentieth century procedures.

Repeatable for credit
1-2 units

MUSC 038A. Composition/Arranging – Improvised Music

Private studio lessons. Practicing processes needed to bring personal musical ideas and concepts to reality, as in compositions or arrangements.

Prerequisite: Instructor consent.
Repeatable for credit
1 unit

MUSC 040A. Jazz Improvisation – I

Development of performance skills for lead-sheet interpretation: response and interplay, ear-training for improvisers, basic chord-scales and jazz vocabulary. Vocal, instrumental, and transcription exercises. In-class performance. Emphasis will be placed on blues, modal compositions, and simple song forms.

Pre/Corequisite: MUSC 1A, MUSC 1B and MUSC 25A; or equivalent.
Seminar 1 hour/activity 2 hours.
2 units

MUSC 041A. Applied Lyric Diction

Pronunciation and applied execution of correct diction in English and Italian for singers in a master class setting. Performance of specific literature of these languages with emphasis on correct usage of the International Phonetic alphabet for lyric diction.

Prerequisite: Instructor consent.
1 unit

MUSC 041B. Applied Lyric Diction

Pronunciation and applied execution of correct diction in French and German for singers in a master class setting. Performance of specific literature of these languages with emphasis on correct usage of the International Phonetic Alphabet for lyric diction.

Prerequisite: Instructor consent.
1 unit

MUSC 081. Concert Listening I

Active involvement in the professional musical life of the campus and community through attending programs from the master list published each semester and writing five critical reviews.

Open to all university students.
Repeatable for credit
Credit / No Credit
1 unit

UPPER DIVISION**MUSC 100W. Written Communication II**

Examines the process of critique, creative description, research, and professional communications central to the performing arts. Students develop writing skills through the study of varied formats focused on the arts.

Prerequisite: ENGL 1B (with a grade of C or better); Completion of core GE, satisfaction of Writing Skills Test and upper division standing.

ABC/No Credit

GE: Z

3 units

MUSC 101. Music Systems Review

Review of Music Systems topics (oral skills, counterpoint, orchestration, form and analysis) for graduate students.

Prerequisite: Instructor consent.

3 units

MUSC 102. Orchestration

Ranges, sonorities, transposition and technical considerations of orchestral instruments. Performance of project for full orchestra as culminating activity.

Prerequisite: MUSC 4A and MUSC 4B.

May be taken singly or in any sequence.

3 units

MUSC 103. Form and Analysis

Formal design and pitch structure of Western art music.

Prerequisite: MUSC 4A and MUSC 4B.

3 units

MUSC 104. Counterpoint

The study of the art of counterpoint from the sixteenth century to the present. Includes analysis, imitative and original composition.

Prerequisite: MUSC 4A or MUSC 4B; placement examination.

May be taken singly or in any sequence. Emphasis may vary.

Repeatable for credit

3 units

MUSC 106. Jazz Theory and Arranging

Principles and conventions of melody, harmony, and rhythm in jazz. Significant genres of jazz composition. Fundamentals of arranging for ensembles of various sizes. Composition and arrangement of exercises and pieces in prescribed genres. In-class performance of student works.

Prerequisite: MUSC 2A, MUSC 2B and MUSC 40A; or equivalent.

3 units

MUSC 106A. Jazz Arranging I

First in a two -semester sequence of jazz arranging and composition required of all jazz majors. Deals primarily with techniques involved in writing and arranging music for the small jazz ensemble and addresses skills used jazz composition.

Prerequisite: MUSC 2A, MUSC 2B, MUSC 6, MUSC 40A.

2 units

MUSC 106B. Jazz Arranging II

Second in a two-semester sequence of jazz arranging and composition required of all jazz majors. Deals primarily with techniques involved in writing and arranging music for the large jazz ensemble. Computer notation is required on all finished projects.

Prerequisite: MUSC 2A, MUSC 2B, MUSC 6, MUSC 106A.

2 units

MUSC 107. Introduction to Schenkerian Analysis

Introduction to principles of linear reduction of tonal music according to the method developed by Heinrich Schenker. Learning to accurately read Schenkerian graphic analyses and to perform analyses of student's own on shorter musical works.

Prerequisite: MUSC 1A, MUSC 1B, MUSC 2A, MUSC 2B, MUSC 3A, MUSC 3B, MUSC 4A and MUSC 4B.

2 units

MUSC 108. Music Notation/Computer Engraving

Basics of professional music notation. Computer engraving techniques including: input of notes, rests, rhythm, beams, ties and slurs; multi-voice input; cross-beaming; lyrics; chord symbols; string bowings; percussion notation and symbols.

Repeatable for credit

1 unit

MUSC 109. Film Scoring Techniques

Production-oriented introduction to techniques of applied composition and sound for film, television, video and related visual media. Concepts of style and orchestration.

Prerequisite: MUSC 102 or equivalent.

Emphasis may vary.

Repeatable for credit

3 units

MUSC 110. Baroque and Classical Music History

Exploration and survey of the Baroque and Classical periods with study of styles, composers, works, music theory, performance practices, and cultural and intellectual history. Application of research and library skills through research assignments.

Prerequisite: MUSC 12, or equivalent.

3 units

MUSC 111. Romantic and Modern Music History

Exploration and survey of Romantic and Modern classical music with study of styles, composers, works, music theory, performance practices, and cultural and intellectual history. Demonstration of research and library skills through a term paper.

Prerequisite: MUSC 110, or equivalent.

3 units

MUSC 112. Historical Periods in Western Music

In-depth study of individual periods of European music with the focus changing to cover Middle Ages, Renaissance, Baroque, Classical and Romantic.

Prerequisite: MUSC 110.

3 units

MUSC 116. Aspects of Twentieth Century Music

In-depth study of contemporary music from the various major musical cultures of the world including the European-American classical tradition. Content will vary depending upon national and international trends, compositional techniques and performance media. Formal analysis, listening and performance.

Prerequisite: MUSC 111 (or equivalent).

Note: Emphasis may vary. Offered only occasionally.

Repeatable for credit

3 units

MUSC 117. Music and Culture in Latin America

Traces development of musical traditions in Latin America. Analyzes formation of musical styles resulting from socio-political, cultural and economic processes.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing.

For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: V

3 units

MUSC 120. Worlds of Jazz

Course approaches jazz as part of American and global cultural history, exploring the changing social contexts in which jazz musicians in the US and abroad have worked and lived throughout the 20th century and today.

GE: S

3 units

MUSC 121. Music and Religious Experience

See RELS 121.

3 units

MUSC 124. Special Topics in Music History/Literature

Content varies to allow presentation of one-time courses by specialists from artist-faculty and guests.

Prerequisite: Upper division standing or instructor consent.

Repeatable for credit

1-3 units

MUSC 125A. Fundamental Techniques and Literature: Instrumental

Strings. Required for credential. Instrumental emphasis in music education must take two units including upper and lower strings. Choral/general emphasis must take a minimum of one unit of upper strings.

Prerequisite: Upper division standing.

Activity 4 hours.

Repeatable for credit

1-2 units

MUSC 125B. Fundamental Techniques and Literature: Instrumental

Woodwinds. Required for credential. Instrumental emphasis in music education must take two units including clarinet, saxophone, flute, oboe and bassoon. Choral/general emphasis must take a minimum of one unit and cover clarinet, saxophone and flute.

Prerequisite: Upper division standing.

Activity 4 hours.

Repeatable for credit

1-2 units

MUSC 125C. Fundamental Techniques and Literature: Instrumental

Brass. Required for credential. Instrumental emphasis in music education must take two units including trumpet, French horn, trombone and baritone. Choral/general emphasis must take a minimum of one unit including trumpet and trombone.

Prerequisite: Upper division standing.

Activity 4 hours.

Repeatable for credit

1-2 units

MUSC 125D. Fundamental Techniques and Literature: Instrumental

Percussion. Required for credential.

Prerequisite: Upper division standing.

Activity 2 hours.

Repeatable for credit

1 unit

MUSC 126. Marching Band Techniques

Methods and materials of marching band instruction. Techniques of show development, arranging, drill design, charting, and drill instruction. Principles of band administration, such as budget management, purchasing, and program development. Required for credential.

Prerequisite: Upper division standing and instructor consent.

Offer through Extended Studies.

Repeatable for credit

1 unit

MUSC 129. Electro-Acoustics

Incorporating current music technology and instrumentation in creating advanced works and projects. Required each semester of upper division electro-acoustic majors.

Prerequisite: MUSC 29.

Repeatable for credit

1-2 units

MUSC 130. Piano

Required each semester of upper division piano majors. Continuation of MUSC 30. Study and performance of selections comparable to Bach Preludes and Fugues from Well-Tempered Clavier; Beethoven Sonata, Op. 31 No. 3; Chopin Ballade in A-flat and Debussy Preludes.

Prerequisite: Upper division standing, audition and instructor consent.

Repeatable for credit

1-2 units

MUSC 131. Harpsichord

Required of all upper division harpsichord majors. Continuation of MUSC 31. Study and performance of selections comparable to Bach Sinfonias, any Prelude and Fugue (three-voiced) from Well-Tempered Clavier; Couperin Passacaille in B Minor or equivalent; Domenico Scarlatti Sonatas from later works.

Prerequisite: Upper division standing, audition and instructor consent.

Repeatable for credit

1-2 units

MUSC 132. Organ

Required each semester of upper division organ majors. Continuation of MUSC 32. Study and performance of selections comparable to Bach Passacaglia; Frank Chorales, Hindemith Sonatas.

Prerequisite: Upper division standing, audition and instructor consent.

Repeatable for credit

1-2 units

MUSC 133. Voice

Required each semester of upper division voice majors. Continuation of MUSC 33. Study of more advanced repertoire and techniques.

Prerequisite: Upper division standing, audition and instructor consent.

Repeatable for credit

1-2 units

MUSC 134. Strings

Required each semester of upper division string majors. Violin: All major and minor scales and arpeggios in three octaves; double stops; Kreutzer, Fiorillo, Rode etudes; Bach unaccompanied sonatas and standard concert repertoire, including concerti and sonatas by Vivaldi, Bach, Mozart, Mendelssohn, Beethoven and Brahms. Viola: All major and minor scales in three octaves; double stops; standard etudes including Kreutzer, Mazas, Bruni; Bach suites; all standard repertoire including Block suites, Brahms, Hindemith and Schubert. Cello: All major and minor scales and arpeggios in three octaves; double stops; standard etudes including Duport, Popper, Piatti. Solo literature will include selections by Bach, Beethoven, Boccherini, Brahms, Dvorak, Faure, Haydn, Saint-Saens, Shostakovich and Vivaldi. String Bass: All

major and minor scales and arpeggios; Simandl Reinshagen, Bille, Storch, Hrabe etudes. Includes solo literature of Bottesini, Dittersdorf, Dragonetti, Koussevitzky, Hindemith, Marcello, Vivaldi and standard orchestral literature. Harp: Literature and techniques, with solo and ensemble performances. Etudes by Salzedo, Lariviere and standard concert works comparable to Ravel Introduction and Allegro, Salzedo Preludes, Prescetti Sonata and Pierre Impromptu CapriGuitar: Literature and technique of the guitar including studies by Shearer, Casassi, Giuliani, Torrega and Segovia, and solos by J. S. Bach, Carulli, De Visee, Fernando Sor and Paganini.

Prerequisite: MUSC 34 (or equivalent) and instructor consent.

Repeatable for credit

1-2 units

MUSC 135. Woodwinds

Required each semester of upper division woodwind majors. Clarinet: Selections comparable to Mozart Clarinet Concerto, Brahms Sonatas and Weber Concertino. Saxophone: Comprehensive pedagogical approach to study of modern Saxophone technique from classical to jazz to avant-garde. Repertoire comparable to Dahl Concerto, Woods Sonata, Wirth Indonesian Landscapes, Snyder Variations. Oboe: Selections comparable to Handel Concerto in G Minor. Haydn Oboe Concerto, Hindemith Oboe Sonata, Barret Oboe Studies. Double-reed construction is required. Flute: Selections comparable to Bach Sonata IV, Debussy Syrinx, Mozart concerti and Varese Density. Bassoon: Sonatas comparable to those of Etler, Saint-Saens and Mozart Sonata for Cello and Bassoon; concerti comparable to those of Weber, J. C. Bach, Mozart and Jacob, and representative excerpts from orchestral and chamber repertoire. Double-reed construction is required.

Prerequisite: MUSC 35 (or equivalent) and instructor consent.

Repeatable for credit

1-2 units

MUSC 136. Brass

Required each semester of upper division brass majors. Trumpet: Selections comparable to Haydn Concerto, Hummel Concerto, Arutunian Concerto, Neruda Concerto and Hindemith Sonata. Trombone: Selections comparable to Concerto in B flat by Albrechtsberger or 15 Rhythmic Etudes by Bitsch. French Horn: Selections comparable to Concerto in E flat by Strauss, Concerti Nos. 2 and 4 by Mozart and Hindemith Sonata. Baritone Horn: Selections comparable to literature listed for trombone. Tuba: Selections comparable to Sonata Capriccioso by Takzcs, Concerto by Vaughn Williams and Suite No. 2 by Wilder.

Prerequisite: MUSC 36 (or equivalent) and instructor consent.

Repeatable for credit

1-2 units

MUSC 136A. Vocal-Instrumental Improvisation

Advanced vocal and instrumental private lessons. Development of performing skills in various styles, with emphasis on soloing, reading lead sheets and advanced levels of musicianship and musicality.

Prerequisite: Instructor consent.

Repeatable for credit

1 unit

MUSC 137. Percussion

Required each semester of upper division percussion majors. Performance on timpani, keyboard percussion and snare drum as well as the accessory percussion instruments. Timpani etudes: Goodman, Firth, Cirone and the classical timpani repertoire. Keyboard repertoire includes Orchestral Mallet Player by Cirone. Goldenberg etudes, standard orchestral literature plus 4-mallet literature. Snare drum methods of Podemski, Whaley and Cirone and the standard orchestral literature.

Prerequisite: MUSC 37 (or equivalent) and instructor consent.

Repeatable for credit

1-2 units

MUSC 138. Composition

Required each semester of upper division composition majors. Works created with advanced techniques incorporating traditional and twentieth century procedures. Concert presentation of junior and senior composition projects.

Prerequisite: MUSC 38 (or equivalent) and instructor consent.

Repeatable for credit

1-2 units

MUSC 138A. Composition/Arranging – Improvised Music

Private studio lessons. Advanced applications of the process needed to bring personal musical ideas and concepts to realities, such as compositions or arrangements in concert performance and video productions.

Prerequisite: Instructor consent.

Repeatable for credit

1 unit

MUSC 139. Music Systems/History

Applied studies in music systems and history areas, leading to an approved senior thesis project.

Prerequisite: Upper division standing, area and instructor consent.

Repeatable for credit

1 unit

MUSC 140B. Jazz Improvisation – II

Continuation of 40A in greater depth and complexity: developing coherent solos and musical conversations, building bebop vocabulary, working with alternate melodic and rhythmic resources. Vocal, instrumental, and transcription exercises. In-class performance. Emphasis will be placed on bebop compositions, complex song forms, and rhythm changes.

Pre/Corequisite: MUSC 2A, MUSC 2B and MUSC 40A; or equivalent.

Seminar 1 hour/activity 2 hours.

2 units

MUSC 140C. Jazz Improvisation – III

Continuation of 140B in greater depth and complexity: advanced transcription projects, style analysis, developing personal improvisatory style, advanced rhythmic, melodic, and harmonic techniques. Emphasis will be placed on complex jazz compositions—primarily those of Wayne Shorter, Chick Corea, and Tom Harrell.

Pre/Corequisite: MUSC 2A and MUSC 2B and MUSC 140B; or equivalent.

Seminar 1 hour/activity 2 hours.

2 units

MUSC 140D. Jazz Improvisation – Arts of Accompaniment

Performance practices of jazz accompaniment, with an emphasis on piano skills and rhythm-section interaction. For jazz pianists, singers, and all jazz instrumentalists. In-class performance.

Prerequisite: MUSC 2A, MUSC 2B, MUSC 25A, MUSC 25B and MUSC 40A; or equivalent.

2 units

MUSC 142. Art Song Repertoire

Content varies each semester, with focus on German, French, Italian and Spanish, English and American, or Russian, Polish, Slavic and Scandinavian literature. Performance practice, language, style and history.

Prerequisite: Upper division standing or instructor consent.
Prerequisite: Seminar 1 hour/activity 2 hours.
Repeatable for credit
1 unit

MUSC 143. Literature and Performance for the Keyboard Accompanist

For piano majors who wish to broaden their pianistic skills by performing with singers and instrumentalists both in studio sessions and recital situations. A maximum of four units may be repeated.

Prerequisite: Upper division standing or instructor consent.
Repeatable for credit
1 unit

MUSC 144. Solo Literature and Performance Practices and Pedagogy

Performance of vocal or piano literature studied in studio lessons, with discussion of technique, pedagogy, recital preparation and interpretive, stylistic and linguistic aspects of literature in a master class setting to develop confidence and serve as a forum for exchange of ideas.

Prerequisite: Instructor consent.
Repeatable for credit
1 unit

MUSC 145. Performance Concepts

Content varies to allow presentation of one-time courses by specialists from artist-faculty and guests.

Prerequisite: Upper division standing or instructor consent.
Repeatable for credit
1-3 units

MUSC 146A. Pedagogy – Piano

For piano majors and established teachers who primarily wish to teach. Teaching techniques and application of these skills from elementary to most advanced levels.

Prerequisite: Upper division standing or instructor consent.
Repeatable for credit
2 units

MUSC 146B. Pedagogy – Percussion

Two projects chosen from the following areas: conducting, composition, clinics, orchestral repertoire, lesson plans, article, book or research projects.

Prerequisite: Upper division percussion majors only.
Repeatable for credit
1 unit

MUSC 147A. Beginning Conducting

Basic choral and instrumental conducting techniques.

Prerequisite: Upper division standing or instructor consent.
Seminar 1 hour/activity 2 hours.
2 units

MUSC 147B. Advanced Conducting

Conducting choral and instrumental groups under supervision. May be repeated once for credit.

Prerequisite: MUSC 147A or instructor consent.
Seminar 1 hour/activity 2 hours.
Repeatable for credit
2 units

MUSC 148A. Improvisational Traditions of the World – Africa and Diaspora

Selected topics in performance practice and social context of improvisational musics from African and African-Diaspora cultures: selected genres from Sub-Saharan Africa and their relations to Diasporic traditions in the Americas, the Caribbean, and elsewhere. In-class and/or public performances.

Pre/Corequisite: MUSC 2A and MUSC 2B or equivalent.
Seminar 1 hour/activity 2 hours.
Repeatable for credit
2 units

MUSC 148B. Improvisational Traditions of the World – Asia

Selected topics in performance and social context of improvisational musics of Asia: gamelan and/or other selected genres. In-class and/or public performances.

Pre/Corequisite: MUSC 2A and MUSC 2B or equivalent.
Seminar 1 hour/activity 2 hours.
Repeatable for credit
2 units

MUSC 148C. Improvisational Traditions of the World – Modal Traditions

Selected topics in performance and social context of modal traditions of the Middle East, North Africa, South Asia, the Jewish Diaspora, and/or other non-jazz modal idioms. In-class and/or public performances.

Prerequisite: MUSC 2A and MUSC 2B and MUSC 140B; or equivalent.
Seminar 1 hour/activity 2 hours.
Repeatable for credit
2 units

MUSC 150A. Concert Choir

Large select ensemble, specializing in advanced a cappella and symphonic major works from all periods.

Prerequisite: Instructor consent.
Repeatable for credit
1 unit

MUSC 150B. Alumni Chorale

Select choir for university alumni choir graduates and/or graduate students currently enrolled at SJSU. Performance of major works with the San Jose Symphony and/or in other select concerts.

Prerequisite: Audition.
Repeatable for credit
1 unit

MUSC 151. University Women's Chorus

Rehearsal and performance of choral masterpieces and music with wide popular appeal.

Prerequisite: Audition and instructor consent.
Repeatable for credit
1 unit

MUSC 152. Opera Theater

Training and performance experience in the field of opera. Fully-staged productions of one-act and conventional length works of varying styles.

Prerequisite: Audition and instructor consent.
Repeatable for credit
1 unit

MUSC 153. Symphony Orchestra

Standard orchestral repertoire.

Prerequisite: Audition and instructor consent.
Repeatable for credit
1 unit

MUSC 154. Symphonic Band

Select and limited ensemble specializing in advanced band repertoire from all periods.

Prerequisite: Audition and instructor consent.
Repeatable for credit
1 unit

MUSC 156. Spartan Marching Band

Open by permission to all students who play saxophone, brass or percussion instruments. Performs at all home and selected away Spartan football games.

Prerequisite: Instructor consent.
Repeatable for credit
2 units

MUSC 157. Jazz Orchestra

Big band jazz performance for instrumentalists and singers. Classic and new repertoire. Concert performances.

Prerequisite: Audition and/or instructor consent.
Repeatable for credit
1 unit

MUSC 158. Gospel Choir

Study and performance of traditional African-American gospel music. In-class and public performances.

Prerequisite: Audition and/or instructor consent.
Repeatable for credit
1 unit

MUSC 159. Afro-Latin Jazz Ensemble

Performance of Afro-Latin jazz and popular music repertoires of the US, the Caribbean, and Latin America. Ensemble techniques and solo improvisation. Concert performances.

Prerequisite: Audition and/or instructor consent.
Repeatable for credit
1 unit

MUSC 160A. Choraliers

Small select chamber vocal group specializing in music from all periods, Renaissance through twentieth century.

Prerequisite: Audition and instructor consent.
Repeatable for credit
1 unit

MUSC 160B. Chamber Orchestra

Study and performance of advanced literature for small orchestra, with music selected from a broad range of stylistic periods and composers.

Prerequisite: Audition and instructor consent.
Repeatable for credit
1 unit

MUSC 160D. Collegium Musicum

Reinforces music history studies through performance. Authenticating performance of pre-Baroque music on period instruments and accurate vocal/instrumental practices. Vocal and instrumental, sacred and secular music performed.

Prerequisite: Audition and instructor consent.
Repeatable for credit
1 unit

MUSC 160E. Jazz Singers

Performance of advanced literature for chamber jazz chorus in concerts, festivals, and special events. Performance techniques, improvisation, musicianship and studio-recording techniques.

Prerequisite: Audition and instructor consent.
Repeatable for credit
1 unit

MUSC 160F. Small Jazz Ensembles

Small-group jazz performance: standard literature, informal ("head") arrangements. In-class and/or public performances.

Prerequisite: MUSC 1A, MUSC 1B and MUSC 40A, MUSC 40B; or equivalents.
Repeatable for credit
1 unit

MUSC 160G. Pep Band

Limited to twenty-five woodwind, brass and percussion players; performs at home Spartan basketball games and certain campus functions.

Prerequisite: Audition and instructor consent.

Repeatable for credit

1 unit

MUSC 160H. Percussion Ensemble

Performing class consisting of percussion majors. Master classes during fall semester.

Prerequisite: Non-majors by audition only and instructor consent.

Repeatable for credit

1 unit

MUSC 160J. String Ensemble

Chamber works for various string combinations studied and performed. Rehearsal and performance techniques for small chamber groups.

Prerequisite: Audition and instructor consent.

Repeatable for credit

1 unit

MUSC 160K. Brass Ensemble

Performance of duet, trio, quartet and quintet literature for mixed and homogeneous brass instruments. Literature used represents all style periods with either original or transcription materials.

Prerequisite: Audition and instructor consent.

Repeatable for credit

1 unit

MUSC 160L. Woodwind Ensemble

Chamber works for various woodwind combinations. Rehearsal and performance techniques for small chamber groups.

Prerequisite: Audition and instructor consent.

Repeatable for credit

1 unit

MUSC 160M. Saxophone Ensemble

Overview of music for saxophone ensemble for two to twenty players. All styles studied from Renaissance to Jazz.

Prerequisite: Audition and instructor consent.

Repeatable for credit

1 unit

MUSC 160N. Mariachi Ensemble

Performance of Mexican and Mexican-American musical styles of Mariachi; all instruments and vocals are considered, although traditional Mariachi instruments are encouraged (violin, trumpet, flute, sax and traditional strings).

Offered only occasionally.

1 unit

MUSC 160S. Electro-Acoustic Lab

Small group and ensemble projects in advanced computer music, recording and production for electro-acoustic majors.

Prerequisite: MUSC 167, MUSC 168, MUSC 170A, MUSC 170B and area coordinator consent.

Repeatable for credit

1 unit

MUSC 161. Styles and Interpretation of Opera I

Introduction to styles of opera composition and presentation focusing on opera scenes being presented by the Opera Theater.

Prerequisite: Audition and instructor consent.

Repeatable for credit

1 unit

MUSC 162. Opera Production

Hands-on training and experience in all phases of opera production.

Prerequisite: Instructor consent.

Repeatable for credit

1 unit

MUSC 163. Styles and Interpretation of Opera II

Advanced styles of opera composition and presentation focusing on opera scenes being presented by the Opera Theater.

Prerequisite: Instructor consent.

Repeatable for credit

1 unit

MUSC 166. Physics of Music

See PHYS 166.

GE: R

3 units

MUSC 167. Electro-Acoustic Music I

Overview of electro-acoustic studio production/research techniques and hands-on study of analog, digital and hybrid synthesis techniques related to composition and performance. Introduction to signal processing, MIDI and basic software/hardware systems applications.

Prerequisite: MUSC 4A and MUSC 4B or instructor consent.

3 units

MUSC 168. Electro-Acoustic Music II

Continuation of MUSC 167, covering advanced synthesis, programming and production. Development of strategies for sound design and music composition toward applications in studio and performance environments. Introduction to algorithmic composition.

Prerequisite: MUSC 167 or instructor consent.

Repeatable for credit

3 units

MUSC 169. Digital Synthesis

Techniques of direct digital synthesis and digital signal processing as related to composition, performance and research in new music. In-depth study of hardware and software instrument configurations as applied to various synthesis and processing algorithms.

Prerequisite: MUSC 168 (or equivalent) or instructor consent.

Repeatable for credit

3 units

MUSC 170A. Fundamentals of Sound Recording

Beginning techniques in studio sound and music recording: terminology, tape editing, overdubbing, microphone technique and production techniques.

Prerequisite: MUSC 1A and MUSC 1B.

3 units

MUSC 170B. Intermediate Sound Recording

Intermediate sound recording and processing techniques in audio production: emphasis on microphone techniques, analog processing and multi-track production.

Prerequisite: MUSC 170A or instructor consent.

Repeatable for credit

3 units

MUSC 170C. Advanced Sound Recording Production

Advanced production techniques in multi-track recording and digital recording, including sound construction, modulation and digital processing. Emphasis on application of techniques to group productions in synchronized audio-visual media.

Prerequisite: MUSC 170B or instructor consent.

Repeatable for credit

3 units

MUSC 171. Introduction to Computers for Musicians

A hands-on course. Satisfies state computer requirements for single subject teaching credential. Review of hardware and software for music applications. CAI, CD-ROM, sequencing, notation, graphics, word processing, programming.

Prerequisite: Upper division standing or instructor consent.

Offered only occasionally.

3 units

MUSC 172. The Arts in U.S. Society

See CA 172.

GE: S

3 units

MUSC 173. Thinking About Contemporary World Arts

See CA 173.

GE: V

3 units

MUSC 180. Individual Studies

Prerequisite: Upper division standing and instructor and director consent. May be repeated up to 4 units of credit.

Repeatable for credit

Credit / No Credit

1-2 units

MUSC 181. Concert Listening II

Required active involvement of all music majors in the professional musical life of the campus and community through attending programs from the master list published each semester and writing five critical reviews.

Prerequisite: Upper division music major.

Repeatable for credit

Credit / No Credit

1 unit

MUSC 182. Senior Project

Senior capstone project for B.A. in music. By advisement and according to degree requirements either a senior thesis, lecture/demonstration or lecture/recital.

Prerequisite: Upper division standing, instructor consent and area approval.

Credit / No Credit

1 unit

MUSC 185A. Music for Children

Music fundamentals for the classroom teacher. Singing, playing instruments, movement, reading notation, creating music. Kodaly, Orff, Dalcroze, techniques emphasized with multicultural approach. Technology for elementary music through lab experience.

Prerequisite: Upper division standing.

3 units

MUSC 186. Singing for Music Theatre

Theoretical and practical study of music as an extension, intensification and completion of the drama. Musical exercises and scenes, emphasizing singing, to introduce the functions and potentials of music in music theatre.

Prerequisite: MUSC 10B, MUSC 26A and MUSC 26B.

2 units

MUSC 190A. Honors Project

Prerequisite: Upper division standing; instructor and director consent.

MUSC 190B must be completed before total of 3 units is granted.

Credit / No Credit

1 unit

MUSC 190B. Honors Project

Prerequisite: MUSC 190A.

Credit / No Credit

2 units

GRADUATE**MUSC 200. Music Bibliography and Research Techniques**

Investigation of resources in music, music literature and related research techniques.

3 units

MUSC 201. Studies in Music History

Research and analytical studies on selected topics in music history. May be repeated once for elective credit.

Prerequisite: MUSC 200 and classified standing.

Repeatable for credit

3 units

MUSC 202. Studies in Musical Systems

The study of various theoretical and applied compositional techniques in music.

Prerequisite: MUSC 200 and classified standing.

Emphasis may vary.

Repeatable for credit

3 units

MUSC 203. Style and Performance Practices

Study of the history of performance practices and applications in contemporary performances. May be repeated once for elective credit.

Prerequisite: MUSC 200 and classified standing.

Repeatable for credit

3 units

MUSC 220. Studies in Advanced Conducting

Problems in conducting, advanced score reading and interpretation.

Prerequisite: Two semesters of undergraduate conducting (or equivalent) and instructor consent.

Repeatable for credit

2 units

MUSC 221. Studies in the World's Improvisational Traditions

Topics in the cross-cultural study of improvisation: theories, practices, and social/economic/historical contexts of selected regional or transnational genres and idioms.

Prerequisite: MUSC 200 and classified standing.

Repeatable for credit

3 units

MUSC 222. Special Topics in Music

Study of specialized subjects in music history, theory, performance or education.

Prerequisite: Instructor consent.

Repeatable for credit

1-3 units

MUSC 224. Supervised Graduate Study

Prerequisite: Audition and consent of instructor and graduate advisor. May be repeated for a maximum of 4 units with Plan A and C, 6 units of Plan B.

Repeatable for credit

1-2 units

MUSC 232. Advanced Field Experience – Pedagogy

Provides opportunity for the qualified graduate student to be involved in planning and assisting in teaching college courses in music. The work is carried on in conjunction with the regular college teacher and must have this supervising teacher's approval.

Repeatable for credit

Credit / No Credit

1 unit

MUSC 298. Special Study

Special study in the field of music (excluding applied instruction).

Prerequisite: Consent of instructor, graduate advisor and the School of Music director.

Repeatable for credit

Credit / No Credit

1-2 units

MUSC 299A. Master's Thesis or Project

Prerequisite: Admission to candidacy and consent of instructor, graduate advisor and School of Music director.

Credit/No Credit/Report in Progress

1-3 units

MUSC 299B. Master's Thesis or Project

Prerequisite: Admission to candidacy and consent of instructor, graduate advisor and School of Music director.

Credit/No Credit/Report in Progress

1-3 units

MUED 184Y. Student Teaching II – Classroom Teaching

Minimum 80-120 class periods of classroom, teaching lab or field teaching in music subjects, grades K-12. Includes seminar.

Prerequisite: Upper division standing and joint approval of major and education departments.

Repeatable for credit

Credit / No Credit

4-6 units

MUED 184Z. Student Teaching III – Classroom Teaching

To be taken concurrently or in different semester than 184Y. May be in a different subject or in different school and will be at a different grade level.

Prerequisite: Upper division standing and joint approval of major and education departments.

Repeatable for credit

Credit / No Credit

4-6 units

GRADUATE**MUED 221. Research/Projects in Music Education**

An introduction to graduate study in music education. Topics include aesthetics, the psychology of music, the history of pedagogy, current methodology and the application of technology to teaching.

Repeatable for credit

3 units

MUED 232. Advanced Field Experience – Pedagogy

Provides opportunity for the qualified graduate student to be involved in planning and assisting in teaching college courses in music. The work is carried on in conjunction with the regular college teacher and must have this supervising teacher's approval.

1 unit

MUED 370A. Methodology for Music Educators: Elementary K-8

Study of Kodaly, Orff and Dalcroze elementary methods including a multicultural emphasis. A review of materials for the comprehensive elementary music curriculum. Peer teaching/field observations of classrooms, choral and instrumental classes required.

Prerequisite: Upper division standing or instructor consent.

Required for certification.

Repeatable for credit

2 units

MUED 370B. Methodology for Music Educators: Secondary

Prepares secondary music instructors to teach non-performance courses, including music appreciation, theory, technology, history and multicultural survey. Peer teaching and field observations required. Organization of comprehensive secondary music departments included.

Prerequisite: MUED 370A.

Repeatable for credit

2 units

MUSIC EDUCATION**UPPER DIVISION****MUED 140. Foundations of Music Education**

Survey of music education's historical, philosophical, psychological and sociological foundations.

Prerequisite: Upper division standing or instructor consent.

3 units

MUED 142. Introduction to Music Education: Early Field Experience

Introduction to teaching music in the public schools. Includes in-school paraprofessional work in approved music program under supervision of university faculty and master teachers.

Prerequisite: Sophomore standing.

Credit / No Credit

1 unit

MUED 170A. Teaching Instrumental Music

Materials, literature, methods and pedagogy for teachers of instrumental music.

2 units

MUED 170B. Teach Choral Music: Literature and Pedagogy

Materials, literature, methods and pedagogy for teachers of choral music.

Prerequisite: Upper division standing.

2 units

MUED 175. Practicum in Music Education

Practical experience in music education including pedagogy, classroom management and practice teaching.

Prerequisite: MUED 140, MUED 170, MUED 147A, MUED147B or instructor consent.

Repeatable for credit

3 units

MUED 184I. Student Teaching for Music Individualized Interns

Supervised student teaching in music class(es) in the public school where the student is employed as an Individualized Intern.

Prerequisite: Admission to Single Subject Credential Program; music advisor and Single Subject Coordinator consent.

Repeatable for credit

Credit / No Credit

2-4 units

Nuclear Science

College of Science

Duncan Hall 180
408-924-4954

Professors

Herbert B. Silber, Director

San José State University is the only campus of The California State University system that has an extended undergraduate and graduate program in Nuclear Science. The Nuclear Science Facility of San José State University is the unique focus of all related teaching and research activity on campus. The Nuclear Science Program is interdisciplinary, though much of its emphasis is presently on teaching and research in nuclear chemistry, nuclear physics, radiological health physics and related areas such as nuclear analytical chemistry and nuclear geo- and cosmochemistry.

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 Chemistry offers its major with a unique concentration in Nuclear and Radiochemistry. The Department of Physics offers its major with a concentration in Nuclear Science. Consult the department listings for degree requirements and course descriptions.

The program culminating in the interdisciplinary MS – Radiological Health Physics is designed to provide students with competency in the theoretical and applied concepts of radiation protection and prepares them for professional careers in radiation protection. Graduates are well prepared to sit for the American Board of Health Physics certification examination. San José State University has discontinued the MS Program in Radiological Health Physics and no new students are being accepted into the program.

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. Close collaborations are established with the Crocker Nuclear Laboratory of the University of California at Davis, Lawrence Livermore National Laboratory, the Los Alamos National Laboratory, the Lawrence Berkeley Laboratory, and the National Institute of Standards and Technology.

The Nuclear Science Facility is conducting applied and developmental work in neutron dosimetry, neutron activation analysis, prompt gamma activation and analytical work with accelerator-produced charged particles. A new research program will develop novel methods of visualizing complex nuclear data on desktop computers.

Courses**NUCLEAR SCIENCE****UPPER DIVISION****NUCS 120A. Laboratory Electronics for Scientists I**

See PHYS 120A.

3 units

NUCS 120I. Laboratory Electronics for Scientists II: Instrumentation

See PHYS 120I.

3 units

NUCS 121S. Radiation Safety

Health hazards involved in working with radioactive substances. Physical nature of hazards, biological effects, standards of permissible exposures, safety precautions and protection techniques. Two units meet State of California recommendations.

Prerequisite: Lower division calculus, chemistry and physics.

1-2 units

NUCS 123. Radiation and Biological Systems

Radiation-induced chemical changes in biologically important molecules, in simple cell systems and in complex mammalian systems, including humans.

Prerequisite: CHEM 8, CHEM 112A, college level biology course or instructor consent.

Pre/Corequisite: NUCS 121S or NUCS 126.

Offered only occasionally.

2 units

NUCS 126. Introduction to Nuclear Science

See CHEM 126.

3 units

NUCS 127. Nuclear Science Lab

See CHEM 127.

ABC/No Credit

3 units

GRADUATE**NUCS 205. Environmental Monitoring**

Radiation and radioactivity in the environment. Natural and man-made sources, radiation detection techniques and the problems and pitfalls in environmental sampling and analysis. Examples of typical measurement problems and methodologies.

Prerequisite: NUCS 121S, NUCS 123, NUCS 126 or instructor consent.

2 units

NUCS 206. Advanced Nuclear Instrumentation

Radiation detection and measurement. The laboratory builds on techniques learned in NUCS 127, leading students to build innovative detector systems for special applications.

Prerequisite: NUCS 127 or instructor consent.

Lecture 2 hours/lab 3 hours.

3 units

NUCS 208A. Advanced Radiation Protection

Discussion of laboratory, industrial and environmental sources of radiation; in-depth review of the interactions of radiation with matter; concepts of radiation dose from external and internal sources; review of radiation measurements, radiation protection standards and procedures.

Prerequisite: NUCS 121S and NUCS 126 or instructor consent.

3 units

NUCS 208B. Applied Radiation Protection

Practical exercises in personnel monitoring, area monitoring, radiation surveys, hazards evaluations, storage operations, radioactive waste disposal, etc.

Pre/Corequisite: NUCS 208A or instructor consent.

Seminar 2 hours.

2 units

NUCS 208C. Medical Radiation Protection

Introduction to concepts of diagnostic radiology, nuclear medicine and radiotherapy and overview of the role of the radiation safety officer in medicine. Topics include imaging, organ function tests, external and internal X and gamma sources, quality control, treatment planning, equipment calibration.

Prerequisite: NUCS 208A or instructor consent.

Lecture 3 hours.

3 units

NUCS 209A. Dosimetry and Shielding I

An advanced treatment of dosimetry of ionizing radiation for medical and biological applications. Topics include: Bragg-Gray cavity ionization measurements, chemical dosimetry, calorimetry, solid-state dosimetry, TLD, dose distribution, microdosimetry.

Prerequisite: NUCS 208A or instructor consent.

Lecture 3 hours.

3 units

NUCS 209B. Dosimetry and Shielding II

Extension of concepts presented in NUCS 209A through practical exercises in effective use of dosimeters (chemical, TLD, solid state).

Pre/Corequisite: NUCS 209A or instructor consent.

Seminar 2 hours.

2 units

NUCS 209C. Internal Dosimetry

The physical, chemical and biokinetic basis for calculations of dose from internally deposited radionuclides. Topics include biokinetic models, performance and interpretation of bioassay sampling and regulatory requirements.

Prerequisite: NUCS 209A or instructor consent.

2 units

NUCS 227L. Synthesis with Radioisotopes

See CHEM 227L.

2 units

NUCS 255. Advanced Topics in Nuclear Science

Lectures and discussions in special fields of nuclear science and radiological health physics. Topics vary. A maximum of 6 units may be repeated.

Prerequisite: Appropriate background in science/engineering and instructor consent.

Lecture 2-3 hours.

Repeatable for credit

1-3 units

NUCS 285. Seminar in Nuclear Science

Presentation of nuclear science and radiological health physics topics by graduate students, faculty, guests. A maximum of 4 units may be repeated.

Seminar 1 hour.

Repeatable for credit

Credit / No Credit

1 unit

NUCS 298. Research

Directed individual laboratory work or field studies in radiological health physics and nuclear science for students with adequate preparation. A maximum of 8 units may be repeated.

Prerequisite: Instructor consent.

Repeatable for credit

Credit / No Credit

1-6 units

NUCS 299. Master's Thesis

Prerequisite: NUCS 298, instructor consent and admission to candidacy for the master's degree.

Repeatable for credit

Credit/No Credit/Report in Progress

2-4 units

Nursing

College of Applied Sciences and Arts

Division of Health Professions

Health Building 420
408-924-3131

Professors

Kathy Abriam-Yago
Jayne Cohen, Director
Phyllis Connolly
Elizabeth Dietz
Irene Gonzales
Bobbye Gorenberg
Irene Lewis
Suzanne Malloy
Susan Murphy
Virgil Parsons
Coleen Saylor
Diane Stuenkel
Marian Yoder

Associate Professors

Toby Adelman
Karen Bawel-Brinkley
Daryl Canham
Deepika Goyal
Chris Hooper
Chia-Ling Mao
Colleen O'Leary-Kelley
Lori Rodriguez
Mercy Wey
Vivian Wong

Assistant Professors

Amy Beddoe
Mark Crider
Barbara Willard

Curricula

- BS, Nursing
- MS, Nursing
- Certificate, California School Audiometrist
- Credential, School Nurse

The programs in the School of Nursing are central to the San José State University mission of preparing graduates for service and scholarship. The mission of the 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 challenging healthcare needs of a diverse community.

General Information

A unique program of quality faculty, curriculum and innovative community service distinguishes the School of Nursing at San José State University, which will celebrate its 50th anniversary in the 2005-06 academic year. Building on its respected tradition at San José State University, the School of Nursing has foreseen changes in the requirements for nursing education that will 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 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. The Family Nurse Practitioner programs (master's and post-master's) are approved by the California State Board of Registered Nursing. The School Nurse Credential Program is approved by the Commission for Teacher Credentialing.

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 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 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 students clubs are the California Nursing Student's Association, Hispanic Nursing Student's Association, Vietnamese Nursing Student's Association, Filipino Nursing Association and the Student Nurses of African Descent Association and Male Association of Nursing Studies. These clubs provide student support and opportunities to further develop leadership skills.

Undergraduate students in the 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 and others involved in health care
- Employing information technology to improve health care delivery and outcome evaluation

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 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 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 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.

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 scheduled to accommodate the time needs of working graduate students.

Undergraduate Admission Procedures

Submit an application and official transcripts of all previous college work to the Office of Admissions and Records by the posted deadlines.

After notice of acceptance to the University as a prenursing major, students should contact the School of Nursing for information regarding advisement for entry into the major. Advising is available through individual or group sessions. Refer to the nursing web site at www.sjsu.edu/nursing for more detail, dates, times, and rooms. The application form for the School of Nursing is also available on the web site. All applications must be accompanied by official sealed transcripts of all college work, proof of admission to SJSU, passing score on the Writing Skills Test, and a score from the entrance examination, the TEAS test.

The School of Nursing is impacted starting Spring 2005. Impaction imposes supplemental criteria that all students must meet. Minimum criteria include:

1. GPA in 30 most recent semester or quarter units equivalents: minimum 2.5
2. GPA in composite of 5 prerequisite courses (BIOL 65, BIOL 66, MICRO 20, ENGL 1A, and PSYC 1): Minimum is 2.75
3. BIOL 65, BIOL 66, and MICRO 20 must be completed within 5 years of establishing eligibility and passed with a grade of "C" or better. Courses may be repeated only once.

Students meeting the above minimum criteria will be ranked according to an impaction score made up of the following:

1. GPA in 30 most recent graded semester or quarter units equivalents.
2. GPA in composite of 5 prerequisite courses (BIOL 65, BIOL 66, MICRO 20, ENGL 1A, PSYC 1). For any of these courses that are repeated, the first and second grade will be included in the calculation.
3. Score on Test of Essential Academic Skills (TEAS). The TEAS is a test of English, reading comprehension, mathematics, and basic science. It is available through the SJSU Testing Center. Refer to the 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.atesting.com to assist in preparation for the TEAS. Test administration dates are posted under Essential Nursing News on the School of Nursing website: www.sjsu.edu/nursing. Check the website frequently for updates.

In order to join the applicant pool for the School of Nursing, students should do the following:

1. Be accepted as a student in good standing at SJSU
2. Declare prenursing as a major
3. Complete the 9 prerequisites courses with a grade of "C" or better. A course may be repeated only once
4. Pass or waive ELM
5. Pass the WST or approved equivalent
6. Complete the TEAS test and submit the score to SJSU School of Nursing
7. Submit an application with documentation of the above 1 through 6. Documentation of prerequisites must be by official unopened transcript submitted to the School of Nursing. Transcripts submitted for admission to the University are not available to the School of Nursing.
8. Application and documentation deadline for entry in Fall semester is April 1. Application and documentation deadline for entry in Spring semester is October 1.

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.

Denial of Licensure

The California Board of Registered Nursing protects the public by screening applicants for licensure in order to identify potentially unsafe practitioners.

The law provides for denial of licensure for crimes or acts which are substantially related to nursing qualifications, functions, or duties. A crime or act meets this criterion if, to a substantial degree, it evidences present or potential unfitness to perform nursing functions in a manner consistent with the public health, safety, or welfare (California Code of Regulations, Section 1444). Applicants with concerns regarding crimes or acts which may affect licensure are encouraged to seek preadmission advice from the Director of the School of Nursing or the California Board of Registered Nursing.

Advanced Placement Program

The School of Nursing provides registered nurses, licensed vocational nurses, medical corpsmen, and persons with coursework in nursing from other schools the opportunity to petition for advanced placement. Students wishing to petition for advanced placement must be nursing majors, have at least sophomore standing in the university and be evaluated by the Advanced Placement Coordinator. Additional information may be obtained by contacting the School of Nursing.

Registered Nurses may enter the Advanced Placement Option after completing 56 semester units of transferable college credit.

Licensed Vocational Nurses may enter an accelerated program after earning 30 semester units of transferable university credit. Individual assessment is available for admission for graduates of foreign nursing schools that have transferable college credit. LVN 30-unit Option: The School of Nursing offers a 30-unit option for LVNs to be eligible to apply for the Registered Nurse licensure examination in the State of California. This option does not permit the award of the baccalaureate degree. The course work includes: BIOL 66 (5 units); MICRO 20 (5 units); NURS 23 (2 units); NURS 125 (4 units); NURS 145 (4 units); NURS 127 (4 units); NURS 147A (2 units); NURS 138 (2 units); NURS 148 (3 units) and NURS 101B (1 unit). This nursing license does not qualify for reciprocity with other states.

BS – Nursing

Undergraduate Coordinator and Advisor: Sue Malloy

Programs at SJSU prepare you for professional careers with a baccalaureate degree if you are:

- A student seeking licensure as a professional nurse
- A Registered Nurse prepared at the associate degree level
- A Licensed Vocational Nurse
- A graduate of a foreign nursing school
- A psychiatric technician or medical corpsmen
- A graduate of a hospital diploma Registered Nurse Program

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 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, so you 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 to the nursing major.

	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 034, NURS 043, NURS 044, NURS 053, NURS 054, NURS 101B, 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, NURS 148 and NURS 155	
Support of the Major	12
CHAD 067 or KIN 067 (3); NUFS 008, PSYC 001 and HPRF 100W (9)	
Total Units Required	130

Note: Students should be aware that for CA RN Licensure an additional 3 units is required in SOC or ANTH. 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

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 coursework 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
<i>Validation of knowledge and skills in physical and psychosocial assessment with specific populations at risk required prior to enrollment in NURS 206.</i>	
NURS 200, NURS 202, NURS 204, NURS 206, NURS 270, NURS 272, NURS 274 and HPRF 295	
Supportive Courses	9
EDSE 101, EDSE 107, EDSE 192 or EDSE 235 (3); EDCO 215, EDCO 228 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, NURS 208 and EDIT 186 or EDIT 272	

MS – Nursing

Graduate Coordinator and Advisor: 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. *Only available through Moore Grant until Spring 2008.

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 coursework 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 Studies and Research website at www.sjsu.edu/gradstudies. 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 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 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. Admission to the Family Nurse Practitioner(FNP) Program involves additional requirements and procedures. Contact the FNP or graduate coordinator. All conditions must be met before enrollment in FNP courses. The Department is not accepting students to the Family Nurse Practitioner Program in 2008-2009. Please contact the School of Nursing for information on subsequent years.

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 2008-2009. Please contact the 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.		
NURS 200, NURS 202, NURS 204 and HPRF 295 (11); NURS 297 or NURS 299 (3)		
Functional Options	27-30
Nurse Educator Option	22
NURS 212, NURS 214 and NURS 216 (10); NURS 259, EDIT 186 or EDIT 272 (3); EDIT 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 101, EDSE 107, EDSE 192 or EDSE 235 (3); EDCO 215, EDSE 228 or EDCO 244G (3)		
Family Nurse Practitioner (FNP) Option	30
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 30-44

Elective courses are to be taken outside the 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 coursework. 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.

Courses

NURSING

LOWER DIVISION

NURS 020. Nursing as a Career

Overview of professional nursing, including, preparation for nursing education, roles, opportunities, and strategies.

2 units

NURS 023. Pathophysiology – Theory I

Introduction to biologic basis for health problems in children and adults. Focuses on the pathophysiology of a variety of disease processes using systems theory as an organizing framework.

Perequisite: Admission to Semester 3, BIOL 65, BIOL 66, CHEM 30A, CHEM 30B, MICR 20, ENGL IA, ENGL 1B, COMM 20, PSYC 1, HUP 67, NUFS 8, (all with grades of "C" or better); completion of Core GE, satisfaction of the Writing Skills Test.
2 units

NURS 024. Nursing Theory II

Nursing care related to actual/potential alterations in physiological functioning in the adult: oxygenation, circulation, digestion/elimination, mobility. Systems approach integrates human responses along the health/illness continuum.

Prerequisite: Completion of Semester 3.
4 units

NURS 033. Introduction to Nursing Process I

Focuses on a beginning understanding of the School of Nursing conceptual framework (systems theory), the roles of the professional nurse, code of ethics for nurses and communication.

Prerequisite: Admission to Semester 3, BIOL 65, BIOL 66, CHEM 30A, CHEM 30B, MICR 20, ENGL IA, ENGL 1B, COMM 20, PSYC 1, HUP 67, NUFS 8, (all with grades of "C" or better).

Corequisite: Enrollment in NURS 23, NURS 43 and NURS 53; completion of Core GE, satisfaction of the Writing Skills Test.
2 units

NURS 034. Nursing Process II

Focuses on therapeutic communication, teaching, learning and research, explored in a culturally diverse environment.

Prerequisite: Completion of Semester 3.
Corequisite: NURS 44.
2 units

NURS 043. Pharmacology

Focuses on drug prototypes from major drug categories. Emphasizes the pharmacodynamics, calculations, nursing assessments and interventions of drugs commonly prescribed.

Prerequisite: Admission to Semester 3, BIOL 65, BIOL 66, CHEM 30A, CHEM 30B, MICR 20, ENGL 1A, ENGL 1B, COMM 20, PSYC 1, HUP 67, NUFS 8, (all with grades of "C" or better); completion of Core GE, satisfaction of the Writing Skills Test.
2 units

NURS 044. Nursing Practicum I

Applies nursing process to acute and chronically ill adult clients using the systems approach. Concepts include oxygenation, circulation, digestion/elimination and mobility.

Prerequisite: Completion of Semester 3.
Corequisite: NURS 24, NURS 34 and NURS 54.
Credit / No Credit
3 units

NURS 053. Skills in Nursing I

Beginning skills course, using a systems theory approach which includes basic psychomotor and cognitive skills which focus on hygiene, asepsis, mobility and the performance of a complete health assessment for culturally diverse populations.

Prerequisite: Admission to Semester 3. BIOL 65, BIOL 66, CHEM 30A, CHEM 30B, MICR 20, ENGL 1A, ENGL 1B, COMM 20, PSYC 1, NURS 8, HUP 67, (all with grades of "C" or better)

Corequisite: NURS 23, NURS 33 and NURS 43; completion of Core GE, satisfaction of the Writing Skills Test.

2 units

NURS 054. Skills in Nursing II

Simulation course for practice of psychomotor and cognitive skills used to provide direct care.

Prerequisite: Completion of Semester 3.

Corequisite: NURS 24 and NURS 34.

2 units

UPPER DIVISION**NURS 100W. Writing Workshop**

See HPRF 100W.

ABC/No Credit

GE: Z

3 units

NURS 101B. Competency Assessment

Competency assessment related to content from Semesters 3-7. Assists in identifying areas where further study is needed.

Prerequisite: Completion of semester 6 or instructor consent.

Repeatable for credit

Credit / No Credit

1 unit

NURS 104. Health Assessment

Using a systems theory approach, acquisition of knowledge and skills to complete health histories and physical assessments on a variety of culturally and ethnically diverse patients across the lifespan.

Prerequisite: Advanced Placement standing.

3 units

NURS 108. Special Topics in Nursing

Significant nursing topics, issues, or themes. Consult Schedule of Classes and/or School of Nursing for focus which varies each semester.

Prerequisite: Upper division standing.

Repeatable for credit

3 units

NURS 111. Medical Ethics

See PHIL 111.

3 units

NURS 120. Preparation for NCLEX-RN

Case study approach used to review knowledge learned from all previous nursing courses. Content includes stress management and test-taking strategies in preparation for taking NCLEX-RN licensure examination.

Prerequisite: NURS 125, NURS 133, NURS 145, NURS 155.

Repeatable for credit

Credit / No Credit

2 units

NURS 124. Theory Overview

Promotes RN students' theoretical basis for health and illness management for individuals, families and groups with various cultural backgrounds. Concepts include professionalism, nursing process, health promotion and teaching, managing curable and chronic conditions, and nursing leadership.

Prerequisite: Advanced Placement standing.

Corequisite: NURS 144.

3 units

NURS 125. Nursing Theory III

Nursing care related to actual/potential alterations in physiological functioning in the adult: endocrine, metabolism, hematologic, sensation, cognitive/perceptive, immunology and reproductive. Systems approach integrates human responses along the health-illness continuum.

Prerequisite: PSYC 1, CHAD 67, NUFS 8,

Completion of Semester 4.

4 units

NURS 126. Nursing Theory IV

Focuses on direct health care of children/childbearing families in acute care and community settings. Biopsychosocial process involved in health, life transitions and illnesses. Identification of related preventive and therapeutic nursing behaviors.

Prerequisite: Completion of Semester 5.

4 units

NURS 127A. Nursing Theory V

Concepts for nursing in psychiatric-mental health settings with clients from culturally diverse backgrounds. Systems approach integrates psychiatric/mental health nursing care for individuals, families and communities with complex health problems.

Prerequisite: Completion of Semester 6.

2 units

NURS 127B. Nursing Theory V

Concepts for nursing in community health in various settings with clients from culturally diverse backgrounds. Systems approach integrates community health nursing care for individuals, families and communities with complex health problems.

Prerequisite: Completion of Semester 6 or Bridge courses.

2 units

NURS 128. Nursing Theory VI

Research methodology and terminology relating to nursing process. Developing knowledgeable consumers of health-related research.

Corequisite: NURS 138.

2 units

NURS 133. Nursing Process III

Focuses on nursing process as it relates to group process, crisis interventions, loss and grieving. Utilizes systems theory with culturally diverse human responses along the health-illness continuum.

Prerequisite: Completion of Semester 4.

Corequisite: NURS 125, NURS 145 and NURS 155.

2 units

NURS 135. Health Issues in a Multicultural Society

See HPRF 135.

GE: S

3 units

NURS 136. Nursing Process IV

Applies nursing process using the systems approach to childbearing/childrearing families, addressing developmental issues, communication patterns, teaching/learning needs, substance abuse and violence in a culturally diverse environment.

Prerequisite: Completion of Semester 5.

Corequisite: NURS 126.

2 units

NURS 137. Nursing Process V

Applies nursing process using the systems approach to persons with community health nursing care needs and/or serious mental illness through case management, supportive therapy and psychoeducational approaches in a culturally diverse environment.

Prerequisite: Completion of Semester 6.

Corequisite: NURS 127A.

2 units

NURS 138. Nursing Process VI

Applies the nursing process using the systems approach to nursing management in a culturally-diverse and cost-contained environment. Encompasses models and theories of management and leadership focusing on the role of the professional nurse.

Prerequisite: Completion of Semester 7.

2 units

NURS 140. Introduction to Critical Care

Introductory critical care course focusing on nursing priorities for selected adult pathophysiological conditions using case study application based on systems theory. Includes didactic content and case studies.

Prerequisite: Successful completion of semester 6.

Credit / No Credit

3 units

NURS 144. Clinical Nursing Applications

Implements concepts and activities using a variety of health care settings. Focus on health promotion, chronic illness and leadership/management.

Prerequisite: California RN License.

Pre/Corequisite: NURS 124 and NURS 134.

2 units

NURS 145. Nursing Practicum II

Applies nursing process to acute and chronically ill adult clients using the systems approach. Concepts include metabolism, sensation, cognition and perception, immunity, hematopoiesis/coagulation and reproductive disorders.

Prerequisite: Completion of Semester 4.

Corequisite: NURS 125, NURS 133 and NURS 155.

Credit / No Credit

4 units

NURS 146A. Nursing Practicum: Care of the Childbearing Family

Nursing care of children and their families.

Prerequisite: NURS 125, NURS 133, NURS 145, NURS 155.

Corequisite: NURS 126, NURS 136.

Taken concurrently with NURS 146B.

Credit / No Credit

2 units

NURS 146B. Nursing Practicum: Care of the Childrearing Family

Nursing care of pregnant women, laboring women, mothers and babies.

Prerequisite: NURS 125, NURS 133, NURS 145, NURS 155.

Corequisite: NURS 126, NURS 136.

Credit / No Credit

2 units

NURS 147A. Nursing Practicum IV-A

Supervised participation in nursing and healthcare of clients with psychiatric-mental health problems in varied settings. Concepts include a systems approach to therapeutic communication and relationships, evidence-based care, symptom management, teaching/learning, leadership, and collaboration with other health care workers.

Prerequisite: Completion of Semester 6.

Corequisite: NURS 127A and NURS 137.

Credit / No Credit

2 units

NURS 147B. Nursing Practicum IV-B

Applies nursing process to care of clients from diverse populations in the community in a variety of settings. A systems approach to caring for individuals and groups across the life span with community health care needs.

Prerequisite: Completion of Semester 6.

Corequisite: NURS 127A and NURS 137.

Credit / No Credit

3 units

NURS 148. Nursing Practicum V

Using a systems approach, applies professional practices in a variety of health care settings. This is a preceptorship experience.

Prerequisite: Completion of Semester 7 and successful completion of NURS 101B or Licensure as a Registered Nurse.

Corequisite: NURS 128 and NURS 138.

Credit / No Credit

3 units

NURS 155. Skills in Nursing III

Simulation course for the practice of advanced, specialized psychomotor and cognitive skills used to provide direct care.

Prerequisite: Completion of Semester 4.

Corequisite: NURS 125, NURS 133 and NURS 145.

2 units

NURS 180. Individual Studies

Individual study or project work on a selected problem or professional issue in nursing.

Prerequisite: Arrangement must be made with a nursing faculty member and approved by the school director during the semester prior to taking course.

Credit / No Credit

1-4 units

GRADUATE**NURS 200. Health Care Systems**

Planning, policy, organization, and financing health care systems. Prepares nurses to participate in design, implementation, and evaluation of ethical, cost-effective, quality health care in health care systems in order to improve health care delivery and client outcomes.

3 units

NURS 202. Theoretical Foundations

Addresses the theoretical underpinnings of nursing practice and research, including a wide range of theories from nursing and other disciplines. Students develop and apply relevant criteria in evaluating theories for practice and research with individuals, families and communities.

2 units

NURS 204. Diverse Populations and Health Care

Planning for health promotion and disease prevention among diverse populations, providing available, accessible, and culturally competent care for individuals, families, and communities.

Prerequisite: Concurrent courses: NURS 200, NURS 202.

Repeatable for credit

3 units

NURS 206. Advanced Health Assessment: CNS

This advanced assessment course focuses on differentiation between normal and pathologic changes experienced by clients. Using systems theory framework, students formulate nursing diagnoses using pertinent symptomatologies and etiologies.

Prerequisite: NURS 104 or equivalent within 3 years.

Repeatable for credit

3 units

NURS 208. Advanced Nursing Seminar

Study of selected topics in nursing science. Course developed and structured by faculty mentor in consultation with student. Theories and research in advanced nursing practice emphasized.

Prerequisite: Consent of graduate coordinator and faculty preceptor.

Repeatable for credit

3 units

NURS 210. Nursing Education Theories and Concepts

Covers theories, models and concepts relevant to teaching and learning in nursing education and health care systems. Emphasis includes teaching processes and strategies for diverse students and settings.

3 units

NURS 212. Curriculum Development in Nursing

Curriculum development with application to programs in nursing and health education. Focuses on formulation of conceptual framework for curriculum development and utilization in making decisions regarding the objectives, learning experiences, and evaluation strategies.

3 units

NURS 214. Nursing Educator Theory and Practicum I

Covers theories, models, and concepts relevant to teaching and learning in nursing education and health care systems. Experience in implementing the educator role using teaching processes and strategies for diverse students and settings.

Prerequisite: NURS 200 or NURS 202 or NURS 204.
5 units

NURS 216. Nurse Educator Theory and Practicum II

Continuing experience with educational theories, models, concepts, and strategies, focusing on educational research, and contemporary educational issues. Advanced experience in implementing the teaching role. Using concepts, models, and theories, the student assumes the educator role with increasing independence.

Prerequisite: NURS 214.
Repeatable for credit
5 units

NURS 220. Gerontology Pathophysiology and Pharmacology

Biologic basis for common health problems in ethnically diverse geriatric populations with emphasis on pathophysiologic mechanisms of disease. Management modalities including disease prevention, pharmacological, and other treatment modalities, using systems theory as the organizing framework.

Prerequisite: Graduate standing.

3 units

NURS 222. Gerontological Nursing I

Preparation as a gerontological clinical nurse specialist (CNS) is based on systems framework, focusing on wellness. Theory and practicum emphasize the CNS roles: advanced practice clinician, teacher, consultant, coordinator, researcher, leader, and interdisciplinary collaborator.

Prerequisite: NURS 206, NURS 220.

Repeatable for credit

5 units

NURS 226. Gerontological Nursing II

Preparation as a gerontological clinical nurse specialist is continued and strengthened. Emphasis on communication, interdisciplinary and professional networking and leadership, needs assessment and program planning, coordination and management of gerontological nursing services and contemporary issues.

Prerequisite: NURS 206, NURS 220, NURS 222.

Repeatable for credit

5 units

NURS 236A. Nursing Administration Theories, Concepts and Practicum I

Emphasis on administrative concepts necessary for management of a health care system in a diverse environment. Opportunity for experience in the nurse administrator role in a practicum.

Pre/Corequisite: NURS 200, NURS 202, NURS 204.

Repeatable for credit

3 units

NURS 236B. Nursing Administration Theories, Concepts and Practicum II

Opportunity for advanced experience in the nurse administrator role. Applying conceptual models and theories for operations and personnel management, the student assumes the administrator role in a practicum with minimal supervision within a diverse health care setting.

Prerequisite: NURS 236A.

Repeatable for credit

4 units

NURS 246. Modern Organizations and Health Care

Theoretical analysis of organization systems using the modern health care organization within an ethnically diverse environment as a model, organizational dynamics, goals formation and implementation, control systems and organizational effectiveness.

Prerequisite: NURS 200.

3 units

NURS 248. Advanced Health Assessment: FNP

This advanced assessment course focuses on differentiation between normal and pathologic changes experienced in a primary care practice. Using systems theory framework, students formulate appropriate diagnoses using pertinent symptomatologies and etiologies. May be repeated, but not in same semester.

Prerequisite: NURS 200, NURS 202, NURS 104 (or equivalent).

Repeatable for credit

3 units

NURS 250. Family Nurse Practitioner Concepts and Theory I

Diagnosis and management of common illnesses in primary care practice. Research and theory used to identify strategies to promote health and prevent illness. Introduction to pharmacologic therapeutic regimens with emphasis on interdisciplinary care primary and secondary prevention.

Pre/Corequisite: NURS 250 and NURS 253.

Repeatable for credit

2 units

NURS 252. Family Nurse Practitioner Concepts and Theory II

Diagnosis and management of common illnesses in primary care practice. Research and theory used to identify strategies to promote health and prevent illness. Introduction to pharmacologic therapeutic regimens with emphasis on interdisciplinary care, secondary and tertiary prevention.

Pre/Corequisite: NURS 250 and NURS 253.

Repeatable for credit

2 units

NURS 253. Family Nurse Practitioner Practicum I

First clinical practicum increases nurse practitioner competence in the domain of management of patient health/illness status in the areas of health promotion, health protection, disease prevention, and management of patient illness; using evidence-based clinical practice guidelines.

Prerequisite: NURS 248 and NURS 250.

Credit / No Credit

5 units

NURS 254. Family Nurse Practitioner Practicum II

Second clinical practicum increases nurse practitioner competence in the domain of management of patient health/illness status in the areas of health promotion, health protection, disease prevention, and management of patient illness; using evidence-based clinical practice guidelines.

Prerequisite: NURS 250, NURS 252 and NURS 253.

Credit / No Credit

5 units

NURS 256. Family Nurse Practitioner Practicum III

Final clinical practicum increases nurse practitioner competence in the domain of management of patient health/illness status in the areas of health promotion, health protection, disease prevention, and management of patient illness; using evidence-based practice guidelines.

Prerequisite: NURS 254.

Credit / No Credit

5 units

NURS 258. Professional Issues for Nurse Practitioners

Exploration of current health care environment as it pertains to policy development, health planning, and economic management at the national, state, and local levels. Exploration of equitable distribution of existing resources, policy development, program evaluation, and client/population outcomes.

Pre/Corequisite: NURS 250, NURS 252 and NURS 253.

Repeatable for credit

2 units

NURS 259. Advanced Clinical Pharmacology

Advanced pharmacotherapeutic management of acute and chronic illness, including understanding pharmacokinetic and pharmacodynamic function of drug therapies. Assessing needs of patients, prescribing, furnishing, and monitoring procedures of drug treatment regimens across the life span and across levels of acuity.

Prerequisites: Graduate status and instructor consent.

3 units

NURS 260. Advanced Physiology and Pathophysiology for Advanced Practice Nursing

Advanced physiology and compensatory mechanisms are examined with emphasis on system interaction, homeostasis, and pathophysiology. Focus for this course is on physiologic processes with clinical application to individuals across the lifespan. Course has both online and in-class components.

Prerequisites: Graduate status or instructor consent.

Repeatable for credit

3 units

NURS 266. Health Care Informatics

This on-line course examines informatics in health care emphasizing information systems and use of the information technology (IT) applications to support health. Evaluation of actual and potential IT applications in health care administration, practice, research, and education is included.

Prerequisite: Either NURS 200; NURS 202 or NURS 204 and instructor consent.

3 units

NURS 270. School Nursing Pathophysiology and Pharmacology

Biologic basis for common health problems in ethnically diverse school age populations with emphasis on pathophysiologic mechanisms of disease. Management modalities including disease prevention, pharmacologic and other treatment modalities using systems theory as organizing framework.

Repeatable for credit

3 units

NURS 272. School Nursing I: Clinical Nurse Specialist

Preparation of school nurse as an advanced practice clinical nurse specialist is provided based on a systems framework. Practicum emphasizes the beginning Clinical Nurse Specialist roles of School Nurse.

Prerequisite: NURS 270 or instructor consent.

Repeatable for credit

5 units

NURS 274. School Nursing II: Clinical Nurse Specialist

Preparation of a school nurse advanced practice clinical nurse specialist is continued and strengthened. Practicum emphasizes the incorporation, integration, and application of the Clinical Nurse Specialist roles into the professional practice of school nursing.

Prerequisite: NURS 272.

Repeatable for credit

5 units

NURS 295. Research Methodology

See HPRF 295.

3 units

NURS 297. Master's Project

Project option is an alternative to thesis option. Students integrate learning from graduate courses and clinical practice by developing a project proposal, implementing and reporting the project in the form of a publishable paper. May not be repeated in same semester.

Prerequisite: HPRF 295 and advancement to candidacy.

Repeatable for credit

Credit / No Credit

1-4 units

NURS 298. Special Studies

For students pursuing advanced study related to populations-at-risk. Independent study project developed by the student may be an individualized small research activity or special study topic.

Repeatable for credit

Credit / No Credit

1-6 units

NURS 299. Master's Thesis

Research proposal developed, research completed and study reported in approved thesis format during three semesters.

Prerequisite: Instructor consent.

Credit/No Credit/Report in Progress

1-4 units

Nutrition, Food Science and Packaging

Division of Health Professions

College of Applied Sciences
and Arts

Central Classroom Building 200
408-924-3100

Professors

Panfilo S. Belo
Clarie B. Hollenbeck
Nancy C. Lu
Lucy M. McProud, Chair
Miriam S. Perry
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

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	24-36
Of the 51 units required by the university, 15-27 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
Supporting Courses	20
APSC 101, MICR 020, PSYC 001, HPRF 100W and ENVS 001 (17); STAT 095 or HS 067 (3)	
Major Requirements	61-69
Major Core	17
NUFS 008, NUFS 031, NUFS 101A, NUFS 103, NUFS 106A and NUFS 139	
Emphasis Requirements	42-50
Select one emphasis.	
Nutrition Science	45
NUFS 108A, NUFS 108L, NUFS 109, NUFS 122, CHEM 001A, CHEM 001B, CHEM 008, BIOL 065, BIOL 066, CHEM 132, CHEM 132L and PKG 107; Complete five units from: NUFS 105, NUFS 106B, NUFS 110A, NUFS 110B, NUFS 118, NUFS 123, NUFS 150, NUFS 193, NUFS 194	
Nutrition Education	42
NUFS 104A, NUFS 105, NUFS 111, NUFS 114A, NUFS 190, BIOL 021, CHEM 030A, CHEM 030B, HPRF 135 and PKG 107; EDIT 116 or EDIT 186; Complete ten units from: NUFS 111L, NUFS 113, NUFS 116, NUFS 123, NUFS 134, NUFS 194	
Sports Nutrition	46
NUFS 123, NUFS 105, NUFS 108A, NUFS 109, NUFS 124, NUFS 190, BIOL 066, CHEM 030A, CHEM 030B, CHEM 132, KIN 155, KIN 162 and PKG 107; Complete four units from: NUFS 116, NUFS 106B, NUFS 135, NUFS 114A, NUFS 194, HPRF 135	
Food Management	47
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 and PKG 107; ECON 001A or ECON 001B; Complete three units from: NUFS 012, NUFS 023, NUFS 117, HRTM 023 (or by advisement)	
Environmental Food and Health Specialist	50
NUFS 020, NUFS 111, NUFS 111L, NUFS 133, NUFS 150, CHEM 001A, CHEM 001B, CHEM 030B, PHYS 002A, PHYS 002B, MATH 008, HS 161, BIOL 020, BIOL 021, PKG 107 and POLS 114	
Capstone Course	2
NUFS 192	
Electives	0-13
Total Units Required	120

Note: 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
APSC 101 (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
HPRF 135, NUFS 106B, NUFS 108A, NUFS 108L, NUFS 109, NUFS 110A, NUFS 110B, NUFS 111, NUFS 111L, NUFS 112, NUFS 113, NUFS 114A, NUFS 139 and NUFS 190 (30); 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

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	27
CHEM 030A and CHEM 030B (6), CHEM 001A and CHEM 030B (8) or CHEM 001A, CHEM 001B and CHEM 008 (13); HPRF 100W or BUS 100W (3); STAT 095 or HS 067 (3); PHYS 002A, MATH 070, MATH 071 and APSC 101 (13); NUFS 020 (2) or MICR 020 (5)	
Major Requirements	44
NUFS 031, NUFS 103, NUFS 133, NUFS 139, NUFS 155, NUFS 192, PKG 107, PKG 141A, PKG 141B, PKG 146, PKG 156, PKG 159, PKG 170 and ISE 155	
Approved Electives	11
Complete eleven 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

Minor – Nutrition and Food Science

	Semester Units
Required Courses	9
NUFS 008 or NUFS 009 (3); NUFS 105 and NUFS 139 (6)	
Additional Courses	6
Complete six units from: NUFS 001A, NUFS 020, NUFS 021, NUFS 022, NUFS 031, NUFS 101A, NUFS 103, NUFS 104A, NUFS 106A, NUFS 111, NUFS 115, NUFS 116, NUFS 117, NUFS 118, NUFS 123, NUFS 193, NUFS 194 (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 170, ISE 155, NUFS 139	

Total Units Required

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

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	10
NUFS 201 and NUFS 217; NUFS 216 or NUFS 242; HPRF 295	
Choose One Plan	20
Plan A	20
Graduate Program Emphasis	
Courses	14
Thesis	6
NUFS 299	
Plan B	20
Graduate Program Emphasis	
Courses	17-19
Project	1-3
NUFS 298	
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.

Courses**NUTRITION AND FOOD SCIENCE****LOWER DIVISION****NUFS 001A. Physical Science of Food**

Introductory course to the physical, chemical and sensory properties of food for students not majoring in the sciences. Basic structure, function and organization of foods, laws of thermodynamics, systems of classification, as well as the interactions of energy and matter.

GE: B1

3 units

NUFS 004. Science, Nutrition and Health

Principles of scientific investigations and broad overview of life science, from chemistry to cellular and physiological functions, using nutrition to integrate topics. Interplay of culture, technology, science, nutrition and human conditions.

Not open to majors. No credit for students who have taken NUFS 9.

3 units

NUFS 008. Nutrition for the Health Professions

Nutrients and their functions; recommended nutrient intakes and evaluation of dietary adequacy; relationship of nutrition to optimum health and dietary changes in disease. For nutritional science, nursing and other health profession majors.

3 units

NUFS 009. Introduction to Human Nutrition

Principles and methodology of nutritional science; standards of nutrient intake; physiological functions and chemical classification of nutrients; nutrient needs throughout the lifespan; relationship between diet and disease; scientific, social, and psychological issues.

Not open to majors.

GE: E

3 units

NUFS 012. Food, Beverage and Labor Cost Control Systems

See HRTM 012.

3 units

NUFS 020. Sanitation and Environmental Issues in the Hospitality Industry

Sanitation in food service, hotel and travel/tourism industries; study of pathogenic organisms and food handling procedures. Occupational health, safety and environmental control in the hospitality industry.

2 units

NUFS 021. Culinary Principles and Practice

Introduction to principles of food and beverage production and techniques. Emphasis on quality and culinary standards.

Lecture 2 hour/Lab 3 hours.

3 units

NUFS 022. Catering and Beverage Management

Planning and executing catering and buffet functions. Evaluation of alcoholic and non-alcoholic beverages regarding purchasing, storage, preparation, merchandising and regulations.

Prerequisite: NUFS 20 or instructor consent

Lecture/lab 4 hours.

2 units

NUFS 023. Culinary Concepts

See HRTM 023.

3 units

NUFS 025. Internship in Foodservice Management

Approved professional broad-based work experience in foodservice management industry for total of 200 hours. Written report due at completion. A maximum of 2 units may be repeated.

Prerequisite: NUFS 20 and instructor consent.

Repeatable for credit

Credit / No Credit

1-2 units

NUFS 031. Professionalism in Nutrition, Food Science and Packaging

Professional roles, skills and opportunities in the fields of dietetics, foodservice, food science, and packaging.

Prerequisite: ENGL 1B or instructor consent.

1 unit

NUFS 081. Nutritional Considerations for the Athlete

Integrating and applying principles of nutrition and metabolism to optimize the performance and health of various athletes. Individual diets are evaluated and efficacy of nutritional ergogenic aids are explored.

Prerequisite: Enrollment in an intercollegiate sport and instructor consent.

1 unit

UPPER DIVISION**NUFS 100W. Writing Workshop**

See HPRF 100W.

ABC/No Credit

GE: Z

3 units

NUFS 101A. Food Science

Experimental study of food and introduction to scientific methods used in food evaluation; functions of ingredients in prepared foods.

Prerequisite: CHEM 30B or CHEM 8; NUFS 21. College basic food preparation course or instructor consent.

Lecture/lab 6 hours.

4 units

NUFS 103. Food Processing and Packaging I

Principles and methods of food preservation/processing and packaging operations. Raw materials handling, effect of processing on nutritional value of foods, packaging and food additives. Recommended: College basic food preparation course.

Prerequisite: CHEM 30B or CHEM 8 or instructor consent.

Lecture/lab 5 hours.

3 units

NUFS 104A. Cultural Aspects of Food

Regional, ethnic and religious influences on food culture. Activity with foods of several cultures.

Prerequisite: Upper division standing.

Lecture/activity 4 hours.

3 units

NUFS 105. Current Issues in Nutrition

Controversial topics, including the relation of nutrition to cancer, coronary heart disease, hypertension, diabetes, eating disorders, osteoporosis and athletic performance; recommended nutrient intakes; and other current issues.

Prerequisite: NUFS 008, NUFS 009, NUFS 163 or equivalent introductory course in human nutrition.

3 units

NUFS 106A. Human Nutrition in the Life Span

Integrates chemical, biological and social sciences into a comprehensive concept of human nutrition. Emphasis on assessing nutrient status; planning and intervention throughout the life cycle.

Prerequisite: NUFS 8 or passing grade on challenge exam; instructor consent.

Corequisite: HPRF 100W.

3 units

NUFS 106B. Research Methodology in Nutrition and Food Science

Research design, process and methodology.

Scientific methods of research; interpretation of results; statistical procedures and application of research to nutritional sciences.

Prerequisite: STAT 95 and HPRF 100W.

Corequisite: NUFS 106A.

1 unit

NUFS 107. Principles of Packaging

See PKG 107.

Repeatable for credit

3 units

NUFS 108A. Nutrition and Metabolism

Chemical and physiological studies of carbohydrate, protein, lipid, vitamin and mineral metabolism. Application to the normal nutrition of human beings.

Prerequisite: NUFS 106A, CHEM 132, and HPRF 100W; BIOL 54 or BIOL 66.

3 units

NUFS 108L. Nutrition Laboratory

Chemical and biochemical analysis of nutrients and metabolites in body fluids for the assessment of nutritional status of human subjects.

Prerequisite: STAT 95, BUS 90 or HS 167.

Corequisite: NUFS 108A, CHEM 132L.

Lecture 1 hour/lab 3 hours.

2 units

NUFS 109. Advanced Nutrition

Advanced studies of vitamins and minerals.

Evaluation and interpretation of nutritional research methodology and findings.

Prerequisite: NUFS 106A, CHEM 132 and HPRF 100W; BUS 90, STAT 95 or HS 167.

3 units

NUFS 110A. Medical Nutrition Therapy

Application of nutritional principles and dietary intake to meet the needs of various pathological conditions.

Prerequisite: NUFS 108A.

Corequisite: NUFS 109

Lecture/activity 4 hours.

3 units

NUFS 110B. Medical Nutrition Therapy

Application of nutritional principles and dietary intake to meet the needs of various pathological conditions.

Prerequisite: NUFS 110A and NUFS 109.

Corequisite: NUFS 109

Lecture/activity 4 hours.

3 units

NUFS 111. Foodservice Production Management

Principles and procedures for menu planning, production scheduling, volume food production, operation of foodservice equipment, sanitation control and formula costing.

Prerequisite: NUFS 101A or HRTM 11; NUFS 8 or NUFS 9; or instructor consent.

2 units

NUFS 111L. Foodservice Production Management Laboratory

Experience in foodservice production management.

Prerequisite: NUFS 101A or NUFS 23; NUFS 8 or NUFS 9; MICR 20 or NUFS 20; CHEM 30A.

Corequisite: NUFS 111 or instructor consent.

Lab 6 hours.

2 units

NUFS 112. Foodservice Procurement

Purchasing in foodservice operations: food and equipment. Selection and storage of food and writing food specifications. Selection and layout of equipment and writing equipment specifications.

Prerequisite: NUFS 111 and NUFS 111L or instructor consent.

Lecture/activity 3 hours.

2 units

NUFS 113. Foodservice Systems Management

Allocation and management of resources in foodservice systems: materials (food and supplies), facilities (equipment and space), human (management and employee labor), operational (time and money).

Prerequisite: NUFS 111 and NUFS 111L or instructor consent.

Lecture/lab 5 hours.

3 units

NUFS 114A. Community Nutrition for Majors

Nutrition problems; public policy, advocacy and legislation; government programs; needs assessments; management of community services.

Prerequisite: NUFS 106A, senior standing and instructor consent.

3 units

NUFS 114B. Community Nutrition (non-majors)

Key nutrition concepts and terms; age appropriate nutritional interventions focusing on school-age children; nutrition and public policy, advocacy and legislation; government programs and provision of community nutrition services focusing on mother and children.

Repeatable for credit

3 units

NUFS 115. Issues in Food Toxicology

Introduction to toxicology of foods, and food-borne chemicals and organisms. Scientific basis for determining biological and environmental safety of the food supply from food development, growth and production through harvesting, processing, storage and eventual consumption.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: R

3 units

NUFS 116. Aging and Nutrition

The aging process, physiological changes, dietary requirements, diseases, environmental factors, housing, economic status, handicaps, personal relations and current programs for the aged.

Prerequisite: One college nutrition course or instructor consent.

3 units

NUFS 117. Food Evaluation Techniques

Studies in food experimentation, sensory evaluation and objective methods.

Prerequisite: NUFS 8 and NUFS 101A; CHEM 30A, CHEM 30B, CHEM 1A or instructor consent.

Lecture/lab 5 hours.

3 units

NUFS 118. Food Chemistry

Important classes of food constituents, their nature, occurrence, chemical and biochemical significance, and the changes they undergo during food preservation and processing.

Prerequisite: NUFS 101A and/or NUFS 103; CHEM 30B or CHEM 8; CHEM 132 and CHEM 132L or CHEM 135; or instructor consent.

Lecture/lab 5 hours.

3 units

NUFS 122. Chemical Analysis of Food

Techniques in chemical analysis of nutrients and other components of food. Planning, conducting and evaluating a scientific experiment and presenting the data in technical written form.

Prerequisite: NUFS 103, NUFS 118, HPRF 100W and instructor consent; BUS 90 or STAT 95.

Lecture/lab 7 hours.

3 units

NUFS 123. Nutrition for Sport

Planning optimum diets for performance and health; metabolism and energy systems; roles of nutrients in physical performance; efficacy of ergogenic nutrition aids.

Prerequisite: NUFS 8

3 units

NUFS 124. Disordered Eating and Nutrition Therapy

Metabolic, physiological, and psychological determinants and effects of disordered dietary behaviors. Disorders in regulation of food intake, case studies, and different intervention approaches explored. Screening and treatment of disordered eating in athletes emphasized. Opportunities provided to develop counseling strategies.

Prerequisite: NUFS 8.

3 units

NUFS 125. Child Nutrition Program Administration

Study of the components of model child nutrition programs through application of current child health and nutrition principles, education practices, marketing procedures, communication strategies, computer-based nutrient and business analysis and operations management skills.

Prerequisite: Upper division standing.

Offered Summer only.

2 units

NUFS 129. Effective Teaching Strategies for Child Nutrition Programs

Techniques of instructional modeling and practice for child nutrition personnel and students interested in child nutrition programs; demonstration of instructional models from educators as well as practitioners in child nutrition programs; and an introduction to evaluation procedures through practical experiences.

Prerequisite: Upper division standing.

3 units

NUFS 133. Food Processing and Packaging II

Continuation of NUFS 103, emphasizing control of critical points, quality assurance, sanitation, waste disposal, packaging and use of computers in food processing.

Prerequisite: NUFS 103, STAT 95, MICR 123 and instructor consent.

Lecture/activity 4 hours.

3 units

NUFS 134. Complementary and Alternative Health Practices

See HPRF 134.

3 units

NUFS 135. Health Issues in a Multicultural Society

See HPRF 135.

GE: S

3 units

NUFS 139. Hunger and Environmental Nutrition

Physiology of hunger/malnutrition on human development and health; political, social, cultural and gender factors that contribute to world hunger; scientific/technological foundation to population research and food production and their effect on the environment.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: R

3 units

NUFS 141A. Packaging Materials I, Paper, Metal, and Wood Based

See PKG 141A.

3 units

NUFS 141B. Packaging Materials II, Plastics, Composites, and Glass

See PKG 141B.

3 units

NUFS 144. Food Culture: Consuming Passions

Cultural aspects of food as related to regional, ethnic and religious influences. Issue based examination of effects of food behavior on culture, society, health, and economics.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing (60 units). For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: V

3 units

NUFS 146. Packaging for Medical Devices and Pharmaceuticals

See PKG 146.

3 units

NUFS 150. Food and Nutritional Toxicology

Major classes of food toxicants, their importance, properties, detection, metabolism, control and regulation; and basic issues in food/diet safety and toxicology.

Prerequisite: NUFS 103, CHEM 30B or CHEM 8; introductory courses in nutrition and biology and instructor consent.

2 units

NUFS 155. Food Process Engineering

Study of engineering principles, their application in the processing of foods and importance in solving problems in food science and technology.

Prerequisite: PHYS 2A; NUFS 103, calculus.

Lecture/lab 5 hours.

3 units

NUFS 156. Packaging Machinery Systems

See PKG 156.

3 units

NUFS 158. Protective Package Design and Testing

See PKG 158.

3 units

NUFS 159. Packaging Material Handling and Distribution

See PKG 159.

3 units

NUFS 163. Physical Fitness and Nutrition

Use of scientific principles, scientific investigation, and current technological advances to assess the relationship between diet, physical fitness, and disease. Examine scientific literature to evaluate the effects of nutritional intervention on exercise performance.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

Not for Nutrition majors or minors.

GE: R

3 units

NUFS 170. Packaging Development and Management

See PKG 170.

3 units

NUFS 180. Individual Studies

Individual work for majors or minors on special topics by arrangement.

Prerequisite: NUFS 8; instructor and department chair consent during semester prior to enrollment.

Repeatable for credit

Credit / No Credit

1-6 units

NUFS 190. Nutrition Education and Counseling

Education principles; counseling; communication techniques for nutritionists and dietitians working with individuals, small and large groups.

Prerequisite: NUFS 106A or admission to Teacher Education Program and one basic nutrition course or instructor consent.

3 units

NUFS 192. Field Experience in Nutrition and Food Science and Packaging Technology

Practical application of academic principles in nutrition, food science, packaging, dietetics food management, nutrition education, and/or sports nutrition.

Prerequisite: Senior standing in NUFS; instructor consent by end of prior semester.

Supervision 3 to 18 hours.

Repeatable for credit

Credit / No Credit

1-6 units

NUFS 193. Nutrition in Space

Nutritional needs and changes derived from biochemical and physiological studies of space flight and microgravity.

Prerequisite: NUFS 8 or instructor consent.

1 unit

NUFS 194. Entrepreneurial Nutrition

Introduction to entrepreneurial nutrition including professional roles, skills and opportunities.

Prerequisite: ENGL 1A or instructor consent.

1 unit

GRADUATE**NUFS 201. Colloquium in Nutrition, Food Science and Packaging**

Presentation and discussion of original research or specialized studies in nutrition, food science, foodservice systems management, and packaging by graduate students, faculty and guest speakers. Course is repeatable two times.

Prerequisite: Instructor consent.

Repeatable for credit

1 unit

NUFS 216. Seminar in Food Chemistry and Packaging

Chemical and physical properties of food constituents as they relate to food quality, functionality and the use of proper packaging techniques to preserve nutritive value.

Prerequisite: NUFS 103.

Lecture 3 hours.

Repeatable for credit

3 units

NUFS 217. Issues in Nutrition, Food and Packaging

Discussion and critical evaluation of advanced topics in nutritional science, food science and technology, foodservice management, and packaging.

Prerequisite: Passing score on NUFS competency exam in emphasis area.

Corequisite: HS 167 or SOCI 103 or STAT 115.

Repeatable for credit

3 units

NUFS 218. Advanced Food Chemistry

Critical evaluation of current literature and research in food composition, food processing, nutritional content of food and analytical methods.

Prerequisite: NUFS 118.

Repeatable for credit

3 units

NUFS 219A. Advanced Nutrition and Metabolism

Biochemical and physiological processes of nutrients and their needs by humans. Vitamins and minerals.

Prerequisite: Biochemistry; NUFS 108A or NUFS 109 (each with a grade of "C" or better).

Repeatable for credit

3 units

NUFS 219B. Advanced Nutrition and Metabolism

Biochemical and physiological processes of nutrients and their needs by humans. Proteins, carbohydrates and lipids.

Prerequisite: Biochemistry; NUFS 108A or NUFS 109 (each with a grade of "C" or better).

Repeatable for credit

3 units

NUFS 220A. Advanced Medical Nutrition Therapy

Assessment and evaluation of nutritional status; diet planning in health and disease; counseling techniques; and medical documentation.

Prerequisite: NUFS 110A and NUFS 110B (each with a grade of "C" or better).

3 units

NUFS 220B. Advanced Medical Nutrition Therapy

Nutritional consequences of various diseases in specific organ systems. Current techniques and research in parenteral and enteral nutrition, nutritional assessment and health care.

Prerequisite: NUFS 220A.

3 units

NUFS 222. Advanced Research Techniques in Nutrition and Food Sciences

Independent research project in nutrition and food science. Experimental design and evaluation. Presentation of results.

Prerequisite: Advanced nutrition, food science and statistics; instructor consent.

Lecture and lab 7 hours.

3 units

NUFS 224. Program Planning and Communication in Nutrition

Development, implementation and evaluation of nutrition programs; public policy; community resources; communication skills.

Prerequisite: Instructor consent.
3 units

NUFS 242. Advanced Foodservice/Restaurant Management

Quantitative and qualitative analyses of foodservice/restaurant operations as bases for managerial decision-making.

Prerequisite: NUFS 113.
Lecture 3 hours.
3 units

NUFS 260. Multidisciplinary Health Promotion in Later Life

Multidisciplinary assessment and planning. Principles of promoting health and preventing disability in later life. Physical, psychological, social, cultural, spiritual, and environmental factors that affect length and quality of life.

Prerequisite: BIOL 66 or GERO 108 or instructor consent.
3 units

NUFS 270. Package Design for End Use

See PKG 270.
3 units

NUFS 280A. Dietetic Internship

Supervised professional field experience to fulfill ADA eligibility requirements for registered dietitian examination.

Prerequisite: DPD or instructor consent.
Course can be taken for 1, 3, 6, 9 or 12 units.
Repeatable for credit
Credit / No Credit
1-12 units

NUFS 290. Advanced Nutrition Education

Emphasis on nutrition competencies, goals/objectives, preparation and presentation of teaching-learning strategies and evaluation.

Prerequisite: Instructor consent.
3 units

NUFS 295. Research Methodology

See HPRF 295.
3 units

NUFS 297. Research Methods in Nutrition and Foods

Experimental methods and design, analysis of data and application in nutrition and foods research. Preparation of a research proposal.

Prerequisite: STAT 95 (or equivalent).
3 units

NUFS 298. Special Studies in Nutrition, Food Science and Packaging

Advanced individual research and projects.

Prerequisite: Consent of graduate advisor.
Repeatable for credit
Credit / No Credit
1-6 units

NUFS 299. Master's Thesis

Prerequisite: Admission to candidacy for the master's degree.
Repeatable for credit
Credit/No Credit/Report in Progress
1-6 units

PACKAGING**UPPER DIVISION****PKG 107. Principles of Packaging**

Basic knowledge of packaging functions, materials and industry. A variety of packaging topics including distribution systems, packaging development, package design, legislation, regulations, societal and environmental issues, ergonomics and packaging careers.

Prerequisite: ENGL 1A or equivalent.
Repeatable for credit
3 units

PKG 141A. Packaging Materials I, Paper, Metal, and Wood Based

In-depth study of selected materials to provide a working knowledge of structures, physical and chemical properties, development, evaluation and design. Experiments in applications, design limitations and cost.

Prerequisite: PKG 107 or instructor consent.
Lecture 2 hours/lab 2 hours.
3 units

PKG 141B. Packaging Materials II, Plastics, Composites, and Glass

In-depth study of plastic and glass materials in packaging; chemical and physical properties, design, manufacturing, compatibility, and evaluation. Experiments in applications, design limitations and cost.

Prerequisites: PKG 107, PKG 141A or instructor consent.
Lecture 2 hours/lab 2 hours.
3 units

PKG 146. Packaging for Medical Devices and Pharmaceuticals

Chemical and physical properties of medical device and pharmaceuticals packages, fabrications techniques, package testing and evaluation methods, regulatory requirements, ergonomics and child resistant packages, tamper evidence, shelf life and aging, coding.

Prerequisite: PKG 107, PKG 141A, PKG 141B or instructor consent.
Lecture 2 hours/activity 2 hours.
3 units

PKG 156. Packaging Machinery Systems

Evaluation of packaging machinery as a subset of a packaging production system. Component selection, design, and implementation of package filling lines in a production facility. Package design requirements for filling lines.

Prerequisite: PKG 107, PKG 141A, PKG 141B, MATH 70, MATH 71, STAT 095.
Lecture 2 hours/lab 2 hours.
3 units

PKG 158. Protective Package Design and Testing

In-depth study of protective packaging dynamics; theory and practice of shock, vibration, compression, humidity, temperature extremes. Measurement and analysis of the dist environment, product fragility, package design principles, package testing and evaluation.

Prerequisite: PKG 107, PKG 141A, PKG 141B, MATH 70, MATH 71, STAT 095.
Lecture 2 hours/lab 2 hours.
3 units

PKG 159. Packaging Material Handling and Distribution

Transportation, handling, and storage of packaged goods. Transportation modes, environment hazards, measurement techniques. Military and Hazmat packaging regulations and testing, classification of goods, legal requirements, export packaging.

Prerequisite: PKG 158 or instructor consent.
3 units

PKG 170. Packaging Development and Management

Capstone course emphasizing development and evaluation of packaging systems. Specifications and design, marketing criteria, package production, distribution performance, legal and environmental evaluations.

Prerequisite: PKG 107, PKG 141A, PKG 141B, PKG 156, PKG 158 or instructor consent.
Lecture 2 hours/lab 2 hours.
3 units

PKG 180. Individual Studies

Individual work for majors or minors on special topics by arrangement.

Prerequisite: PKG 107; instructor and department chair consent during semester prior to enrollment.
Repeatable for credit
Credit / No Credit
1-6 units

GRADUATE**PKG 270. Package Design for End Use**

Current Package Design and Influences on Designs
3 units

Occupational Therapy

College of Applied Sciences
and Arts

Division of Health Professions

Central Classroom Building 203
408-924-3070
www.sjsu.edu/ot

Professors

Anne MacRae
Heidi McHugh Pendleton, Chair
Winifred Schultz-Krohn
Kathleen Barker Schwartz

Associate Professors

Elizabeth Cara
Carolyn Glogoski
Pamela Richardson
Marti Southam

Assistant Professors

Lynne Andonian

Curricula

- BS, Occupational Therapy
- MS, Occupational Therapy (Pattern I)
- MS, Occupational Therapy (Pattern II)

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 2.0.
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 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	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
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	43
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 144	
Electives	12-15
May include a minor selected in consultation with advisor.	
Total Units Required	120

MS – Occupational Therapy Pattern I

	Semester Units
Prerequisites	
Minimum 2.8 GPA in the first 3 semesters of OT major undergraduate courses and a cumulative 2.8 GPA since enrollment in OT program. Successful completion of OCTH 201A.	
Occupational Therapy Core Courses	27
OCTH 201B, OCTH 202, OCTH 204, OCTH 208, OCTH 210, OCTH 220, OCTH 230 and OCTH 235 (25); OCTH 298 (1-2); OCTH 295A (3)	
Thesis or Project	3
OCTH 295B (Plan B)	
Fieldwork	6
OCTH 201A and OCTH 201B	
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 Studies and Research website at www.sjsu.edu/gradstudies. 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 2.8 (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, photography, 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 on quantitative and verbal sections is required) or the Miller Analogies (cut-off

score 400) if preferred. Note: Scores must be sent to the Department of Occupational Therapy, NOT 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 www.sjsu.edu/ot.

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	27
OCTH 120, OCTH 122, OCTH 126, OCTH 130, OCTH 136, OCTH 131, OCTH 132, OCTH 133, OCTH 134, OCTH 136 and OCTH 201A (successful completion)	
Occupational Therapy Core Courses	28
OCTH 204, OCTH 206, OCTH 208, OCTH 210, OCTH 220, OCTH 230, OCTH 235, OCTH 244 and OCTH 295A	
Thesis or Project	3
OCTH 295B	
Fieldwork	
OCTH 201A and OCTH 201B	
Total Units Required	58

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 Studies and Research website at www.sjsu.edu/gradstudies. Students must maintain a 3.0 GPA to remain in the MS Pattern II program.

Courses**OCCUPATIONAL THERAPY****UPPER DIVISION****OCTH 100W. Writing Workshop**

See HPRF 100W.

ABC/No Credit
GE: Z
3 units**OCTH 108. Conditions of Human Dysfunction**

Course provides an overview of general medical and psychiatric conditions commonly seen in occupational therapy clinical practice. Emphasis is placed upon learning the process of diagnosis, pathologic processes, medical management, medical terminology and impact of disease on occupational performance.

Prerequisite: Acceptance to the OT Program.
3 units**OCTH 110. Introduction to the Profession of Occupational Therapy**

Occupational therapy as a profession including exploration of professional organizations, roles, attitude, and behavior and team building. Introduction to theoretical models. Teaches rudimentary skills of how to read research articles, the use of APA, and concept of evidence-based practice.

Prerequisite: Acceptance to Program.
3 units**OCTH 113. Human Adaptation through the Life Span**

Students will relate the concepts of human adaptation in age specific stages through the life span to the occupational therapy domain and process.

Prerequisite: Acceptance to Program.
3 units**OCTH 115. Occupations, Activities, and the OT Process**

Understanding the concept of occupation and activity as it relates to occupational therapy and engagement in occupation to support performance in contexts. Development of pre-entry level competency in group dynamics, team work and therapeutic relationships.

Prerequisite: Acceptance to Program.
3 units**OCTH 120. Functional Kinesiology**

Study of normal body movements based on neurophysiological and biomechanical principles of joint and muscle action correlated with analysis of the body in motion, physiological effects of activity and adaptation to physical dysfunction.

Prerequisite: BIOL 109.
3 units**OCTH 122. Occupational Therapy in Mental Health**

The occupational therapy process of evaluation, intervention planning, and implementation of treatment through individual, group and systems methods in all psychosocial settings with an emphasis on psychiatric problems.

Prerequisite: Abnormal Psychology.
3 units**OCTH 126. Communication and Occupational Adaptation**

Student will learn foundational concepts and practices of occupational therapy through experiential and kinesthetic learning.

Prerequisite: Acceptance to the OT Program.
3 units**OCTH 130. Evaluation in Occupational Therapy**

Approaches to evaluation in occupational therapy. Includes purpose and methods of assessment such as observation, interview, nonstandard and standardized tests. Application of psychometric measurement theory for selection and use of appropriate instruments. Introduction to critical analysis and inquiry.

Prerequisite: Statistics.
3 units**OCTH 131. Occupational Therapy Practice in Neurorehabilitation**

Basic knowledge, skills and attributes necessary to work with individuals with neurological disorders. Includes an overview of theories of nervous system organization along with the pathophysiology and management of various neurological disorders.

Prerequisite: OCTH 130.
3 units**OCTH 132. Occupational Therapy for Physical/Orthopedic Disabilities**

The Occupational therapy process of evaluation, planning, and implementation applied to physical dysfunction.

Prerequisite: OCTH 120.
3 units**OCTH 133. Occupational Therapy Practice in Pediatrics**

Knowledge, skills and attributes necessary to work with infants, children, and adolescents who are ill or who have disabilities. The Occupational Therapy Practice Framework serves as the foundation for assessment and treatment planning.

Prerequisite: OCTH 130.
3 units**OCTH 134. OT Practicum and Seminar I**

Level 1 practicum placement in a designated agency where students will lead occupation groups. Seminar assists students in applying knowledge of group leadership and professionalism.

Prerequisite: OCTH 122 and OCTH 130.
Seminar 2 hour/lab 3 hours.
Credit / No Credit
3 units**OCTH 135. Health Issues in a Multicultural Society**

See HPRF 135.

GE: S
3 units**OCTH 136. Occupational Therapy in Geriatric Practice**

Focuses on the occupational performance of older adults whose function is impaired by normal aging, illness, injury or disability. The occupational therapy process is applied to promote independence, remediate dysfunction, adapt to disability, promote wellness and enhance quality of life.

Prerequisite: OCTH 122, OCTH 130.
3 units**OCTH 144. OT Practicum and Seminar II**

Clinical experience in an area of specialty. Seminar involves sharing experiences, peer review and problem solving.

Prerequisite: OCTH 122, OCTH 130.
Credit / No Credit
4 units**OCTH 156. Independent Living for the Aging and Disabled**

Identification and application of basic management concepts used by the disabled and aging in daily living.

Prerequisite: Upper division standing.
3 units**OCTH 180. Individual Studies**

Investigation of special problems not covered in regular courses, including research project and/or field experience. Course is repeatable for credit in the same term.

Prerequisite: Upper division majors with department chair approval.
Repeatable for credit
Credit / No Credit
1-4 units**OCTH 180H. Individual Studies**

Individual project or special study in an area not covered in the regular curriculum. Results presented in departmental seminar and written report. An honors course.

Prerequisite: 3.0 overall GPA, 3.5 GPA in major.
Repeatable for credit
Credit / No Credit
1-3 units**OCTH 185. Honors Seminar**

Self-directed learning, discussion, independent research and study of advanced topics in occupational therapy.

Prerequisite: OCTH 131, OCTH 133, OCTH 134, senior standing, 3.0 overall GPA and 3.5 GPA in the major.
3 units**OCTH 191. Field Work Experience in OT I**

First three of six months' required full-time fieldwork.

Prerequisite: Completion of academic requirements (including all general education requirements) and departmental approval.
Credit / No Credit
6 units**OCTH 192. Field Work Experience in OT II**

Last three of six months' required full-time fieldwork.

Prerequisite: Completion of academic requirements (including all general education requirements) and departmental approval.
Credit / No Credit
6 units**GRADUATE****OCTH 201A. Field Work Experience**

Three months in full-time field work are required.

Prerequisite: OCTH 134.
This course fulfills departmental prerequisite requirements. It does not fulfill requirements for the graduate degree program. Travel to on-site facilities is the student's responsibility.
Credit / No Credit
6 units

OCTH 201B. Advanced Field Work Experience

Three months in full-time field work are required.

Prerequisite: OCTH 201A.

This course fulfill departmental prerequisite requirements. It does not fulfill requirements for the graduate degree program. Travel to on-site facilities is the student's responsibility.

Credit / No Credit
6 units

OCTH 202. Professional Concepts

Exploration of the role of occupational therapy with various client populations in a variety of practice settings through case study analysis and presentations. Professional and ethical behavior will also be explored.

Prerequisite: OCTH 110.
3 units

OCTH 204. Introduction to the History of Occupational Therapy

Traces the ideas, values and beliefs that have formed the basis for occupational therapy practice in the United States. Analyzes events and leaders who influenced the evolution of occupational therapy from its founding in 1917 to the present.

Prerequisite: OCTH 201A or instructor consent.
3 units

OCTH 206. Occupational Performance Throughout the Life Span

Introduction to occupational therapy and activity analysis. Analyzes occupational performance and the developmental tasks that individuals face at each stage of human development. Introduction to occupation-based theories.

Prerequisite: Acceptance to Program.
3 units

OCTH 208. Evidence-Based Practice in Client Centered Occupational Therapy

Specific intervention techniques are chosen for in-depth exploration using an evidence based practice protocol. Students reflect on their prior internship experience in exploring and applying OT practice models, clinical reasoning, and the concept of client centered practice.

Prerequisite: OCTH 201A.
3 units

OCTH 210. Seminar in Occupational Therapy

Seminar on special topics in occupational therapy. Students will develop knowledge and skills in a selected practice area in preparation for subsequent fieldwork experiences.

Prerequisite: OCTH 201A.
Repeatable for credit
3 units

OCTH 220. Education and Occupational Therapy

Study of learning theory and teaching strategies used in teaching occupational therapy and other health-related professions. Content includes learning styles, objective writing, utilization of media and evaluations.

Prerequisite: OCTH 201A.
Credit / No Credit
3 units

OCTH 230. Management and Occupational Therapy

Principles of ethical administrative, supervisory, and consultative practice in occupational therapy organizational settings. Students review the profession's ethics and learn ethical decision making. Basic grant writing skills and OT advocacy are also included.

Prerequisite: OCTH 201A.
3 units

OCTH 235. Cultural Diversity in Occupational Therapy

Roles of occupational therapist treating diverse populations is examined through exploration of professional culture, the cultures of poverty and disability, and cultures identified by ethnicity or lifestyle. Cultural variables include time, space, relationships, value, beliefs, communication, socioeconomics, gender and tradition.

Prerequisite: OCTH 201A.
Repeatable for credit
3 units

OCTH 244. OT Practicum and Seminar 2

This graduate course is clinically based in an area of specialty. Seminars, in-service education, direct supervision, one to one mentoring, and direct treatment will be used in this course to develop advanced level practice skills.

Prerequisite: OCTH 201A.
Repeatable for credit
Credit / No Credit
4 units

OCTH 251. Information Literacy Competence for Occupational Therapists

Provides basic understanding of how to access the published knowledge in Occupational Therapy, online and in print. Emphasis is placed on searching, evaluating, and using research and evidence-based journal literature. Health ethics covered.

Prerequisite: Admission to Program.
Credit / No Credit
1 unit

OCTH 255. Occupational Justice

Examines the theoretical development of social and occupational justice concepts, global citizenry, and occupational therapy internationalization. Implications for practice and research are explored within the framework of the disability rights movement and the culture of poverty.

Prerequisite: Admission to the program.
Repeatable for credit
3 units

OCTH 263. Theory and Advanced Clinical Practice for Occupational Therapists I

Context, identity, research, clinical reasoning, and personal values with a focus on evidence based practice in OT intervention and application to clinical settings. The theoretical focus is on the CMOP and OTPF.

Prerequisite: Admission to the Program.
3 units

OCTH 272. Management and Organizational Change for Occupational Therapists

Leadership, management principles and impact of the healthcare environment and reform on OT practice. Designed for post-professional students to apply to their practice setting through the development of a strategic plan.

Prerequisite: Admission to the Program.
3 units

OCTH 274. Education for Occupational Therapists

Examines effective teaching theories and methods for occupational therapists to use in their clinical practice as well as in the academic and professional arena. Constructivist philosophy and learning theories are explored.

Prerequisite: Admission to the program.
3 units

OCTH 295A. Introduction to Research Methodology in Occupational Therapy

Introduction to research methodology and the process of critical inquiry. How one conducts research, including traditions and methods used in occupational therapy and how to understand research publications.

Prerequisite: Statistics and OCTH 201A or equivalent.
3 units

OCTH 295B. Advances Research Methodology in Occupational Therapy

Advances topics in research methodology and critical inquiry. Instrument development, the human subjects review process, quantitative and qualitative data analysis, interpretation, and reporting of results.

Prerequisite: OCTH 295A.
Credit / No Credit
3 units

OCTH 298. Supervised Study in Occupational Therapy

Special problems assigned for individual study.
Repeatable for credit
Credit / No Credit
1-3 units

Philosophy

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
William H. Shaw
Richard L. Tieszen

Associate Professors

Karin Brown
Bo Mou

Assistant Professors

Carlos A. Sanchez
Janet Stemwedel
Anand Vaidya

Curricula

- BA, Philosophy
- Minor, Philosophy
- MA, Philosophy

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 Requirements48
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 Education2
Requirements in the Major33
PHIL 009, PHIL 057 or PHIL 157 (with permission of advisor) (3); PHIL 070A and PHIL 070B (6); Eight upper division courses, two 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)	
Electives37
Total Units Required120

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 Required18

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:

- At least 18 units in philosophy have been taken including at least 6 units in upper division work, at least 6 units in the history of philosophy, at least 3 units in ethics, and at least 3 units of symbolic logic (Phil 9 or its equivalent). Exceptions based on comparable studies and experience may be made with graduate committee approval.
- The average grade received in the 18 units is at least a "B".
- Three letters of recommendation have been submitted.

Admission to Conditionally Classified Standing

Applicants who meet 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

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/gradstudies.

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 Courses12
Phil 290, Phil 291 or Phil 292 may be repeated as a substitute for Phil 293 if the philosopher or philosophic tradition is different.	

PHIL 290, PHIL 291, PHIL 292 and PHIL 293

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)

Comprehensive Exam

taken after the bulk of core and elective courses are completed

Choose One Plan

.....6

PHIL 298 and PHIL 299

Plan B (Reading Intensive)

.....6

200-level course and PHIL 298

Plan C (With Applied Philosophy Project)

.....6

PHIL 298 and PHIL 299

Total Units Required30

Courses

PHILOSOPHY

LOWER DIVISION

PHIL 009. Mathematics and Logic for General Education

A survey of basic concepts and methods, focusing on logic, computation, sets, numbers, geometry and probability. Emphasis will be placed on using these concepts in daily life and in coping with public issues.

Prerequisite: Intermediate Algebra; satisfaction of ELM requirement.

GE: B4

3 units

PHIL 010. Introduction to Philosophy

Perennial problems in philosophy, such as Who am I? What can I know? How should I live? Classical philosophical statements bearing on these issues.

CAN PHIL 2

GE: C2

3 units

PHIL 012. Philosophy of the Person

Philosophical issues concerning the origins, development and maturation of the self.

GE: E

3 units

PHIL 057. Logic and Critical Reasoning

Basic concepts of logic; goals and standards of both deductive and inductive reasoning; techniques of argument analysis and assessment; evaluation of evidence; language and definition; fallacies.

CAN PHIL 6

GE: A3

3 units

PHIL 061. Moral Issues

Moral philosophy covering major ethical theories and contemporary moral issues, such as abortion, euthanasia, animal rights, capital punishment, and sexuality.

CAN PHIL 4

GE: C2

3 units

PHIL 066. Introduction to Aesthetics

Issues such as the nature of beauty and ugliness, definition of art, creativity, and interpretation and evaluation of art. Philosophical discussion of works of art and our responses to them.

GE: C1

3 units

PHIL 070A. Ancient Philosophy

Includes pre-Socratics, Socrates, Plato and Aristotle; Hellenistic, Roman and Medieval philosophy.

CAN PHIL 8

GE: C2

3 units

PHIL 070B. Modern Philosophy

Seventeenth and eighteenth century philosophers such as Bacon, Descartes, Hobbes, Spinoza, Locke, Leibniz, Berkeley, Hume and Kant.

CAN PHIL10

GE: C2

3 units

PHIL 070C. Contemporary Philosophy

Introduction to 20th century philosophical movements, such as Feminism, Pragmatism, Logical Positivism, Ordinary Language Analysis, Asian Philosophy, and Phenomenology. Topics come from metaphysics, epistemology, aesthetics, ethics, and social and political philosophy.

Repeatable for credit

3 units

UPPER DIVISION

PHIL 104. Asian Philosophy

Philosophical examination of Confucianism, Daoism, Buddhism and some other significant movements of thought originated in Asia. Comparison with Western philosophy.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: V

3 units

PHIL 106. Philosophy of Art

Aesthetics covering the main schools of thought about art and selected topics related to specific arts, music, theatre, sculpture, painting, literature, etc.

Prerequisite: 3 units of philosophy or upper division standing.

3 units

PHIL 107. Philosophy and Literature

Philosophical theories presented through philosophical texts and philosophically focused literary works.

Prerequisite: 3 units of Philosophy or upper division standing.

3 units

PHIL 108. Political and Social Philosophy

Equality, justice, rights, liberty, the state, law and revolution. Readings drawn from classical and contemporary sources.

Prerequisite: 3 units of philosophy or upper division standing.

3 units

PHIL 109. Philosophy of Religion

Philosophical issues regarding the existence of a supreme being, evil, mysticism, miracles, reincarnation, faith, the possibility of enlightenment, and the connection between religion and morality.

Prerequisite: 3 units of philosophy or upper division standing.

3 units

PHIL 110. Science, Technology and Human Values

The aims, methods and world views of science and technology; such value issues as technological determinism, design aesthetics and moral implications of computer and other technologies.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: V

3 units

PHIL 111. Medical Ethics

Selected ethical problems in health care practices. For example, abortion, patient rights, national health care, euthanasia and genetic engineering, with emphasis on philosophical methods.

Prerequisite: 3 units of philosophy or upper division standing.

3 units

PHIL 112. American Philosophy

The eighteenth century beginnings of American philosophy, pre-Civil War Transcendentalism, scientific philosophy just after the Civil War, classic American philosophy, including Peirce, James, Royce, Santayana and Dewey, and recent developments.

Prerequisite: 3 units of philosophy or upper division standing.

3 units

PHIL 113. Existentialism and Phenomenology

Twentieth century philosophies of experience and human existence. Main topics include description of consciousness, personal authenticity, choice, anxiety, death of God. Philosophers range from Husserl and Heidegger to Sartre and de Beauvoir.

Prerequisite: 3 units of philosophy or upper division standing.

3 units

PHIL 114. Postmodern Philosophy

Contemporary criticisms of philosophy and culture. From early formulations in Nietzsche and Heidegger through current thinkers such as Foucault, Derrida, Irigaray, and others.

Prerequisite: 3 units of philosophy or upper division standing.

Offered only occasionally.

3 units

PHIL 115. Philosophy and Computers

Philosophical problems related to computer science and the use of computers; for example, artificial intelligence, virtual reality, internet, and privacy issues.

Prerequisite: 3 units of philosophy or upper division standing.

3 units

PHIL 118. Latin American Philosophy

Analysis of main themes of Latin-American, Mexican and Mexican-American thought.

Prerequisite: Upper division standing.

3 units

PHIL 119. Africana Philosophy and Culture

Philosophical examination of the ideological roots of social movements in black diaspora cultures from Be-Bop to Hip-Hop.

Prerequisite: 3 units of philosophy or upper division standing.

3 units

PHIL 120. Eastern and Western Philosophy

Comparative examination of Eastern philosophy (including Confucianism, philosophical Taoism, Buddhist thought) and Western philosophy around some perennial issues and concerns, investigating how they could jointly contribute to the common philosophical enterprise in a complementary way.

Prerequisite: 3 units of philosophy or upper division standing.

3 units

PHIL 121. Philosophy and Feminism

A philosophical examination of writings that deal with issues of special concern to women, with emphasis on feminist writings.

Prerequisite: 3 units of philosophy or upper division standing.

3 units

PHIL 122. Social Justice

Critical examination of competing conceptions of justice and their application to social issues in a pluralistic society.

Prerequisite: 3 units of Philosophy or upper division standing.

3 units

PHIL 126. Environmental Ethics and Philosophy

Extensions and applications of Kantian, Lockean, consequentialist and other philosophical theories of value to problems of the environment such as pollution, global warming, species depletion and overpopulation.

Prerequisite: 3 units of philosophy or upper division standing.
3 units

PHIL 132. Ethical Theory

Theoretical problems in the understanding of right conduct, value, obligation, justice, and virtue.

Prerequisite: 3 units of philosophy or instructor consent.
3 units

PHIL 133. Ethics in Science

An examination of values and practices in the culture of science. Issues: transmission of values in scientific communities, interactions between scientific and lay communities, historical development of norms of responsible research, cultural influence on scientific values.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: V
3 units

PHIL 134. Computers, Ethics and Society

The nature of privacy in a technologically interconnected world; the role of computer technologies in the exercise of the human intellect and imagination with respect to freedom of expression and the social good; rights and responsibilities of intellectual property ownership

Prerequisites: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: V
3 units

PHIL 149. Knowledge and Reality

Such topics as nature of knowledge, skepticism, nature of reality, space, time, substance and causality. Course is repeatable once for credit in different area.

Prerequisite: 6 units of philosophy or instructor consent.
Repeatable for credit
3 units

PHIL 155. Philosophy of Law

Theories of the nature of law, legal reasoning, and morality. Philosophical issues in criminal, civil, and constitutional law.

Prerequisite: 6 units of philosophy or instructor consent.
3 units

PHIL 157. Intermediate Logic

Predicate logic, methods of proof and some meta theory. Additional systems of logic may be considered.

Prerequisite: PHIL 9 or instructor consent.
3 units

PHIL 158. Philosophy of Language

Philosophical investigations into language in view of its relation to reality, thought, and logic.

Prerequisite: 6 units of philosophy or instructor consent.
3 units

PHIL 159. Philosophy of Mind

Problems in connection with emotion, intention, human action and personal identity.

Prerequisite: 6 units of philosophy or instructor consent.
3 units

PHIL 160. Philosophy of Science

Scientific methodology, explanation and verification; science and society. Varying topics from physical, biological and social sciences.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.
GE: R
3 units

PHIL 171. Foundations of Mathematics and Computer Science

See MATH 171.

3 units

PHIL 180. Individual Studies

By arrangement. Course is repeatable for a total of 4 units.

Prerequisite: Department chair consent.
Repeatable for credit
Credit / No Credit
1-3 units

PHIL 184. Directed Reading

Course is repeatable for a total of 4 units.

Prerequisite: Qualified upper division student.
Repeatable for credit
Credit / No Credit
1-3 units

PHIL 186. Professional and Business Ethics

Interdisciplinary study of types of ethical problems which arise within the contexts of business occupations and professions. Major ethical theories, critique of economic and criminal justice. Focus is on issues of justice and equality in the U.S. Case studies.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.
GE: S
3 units

PHIL 190. Seminar in Philosophical Classics

Works of a major philosopher or philosophical tradition. Course is repeatable for credit when a seminar topic is different.

Prerequisite: 9 units of philosophy including PHIL 70A and PHIL 70B or instructor consent.
Repeatable for credit
3 units

PHIL 194. Critical Issues/Authors in Comparative Religion

See RELS 194.

Repeatable for credit
3 units

GRADUATE**PHIL 264A. Professional/Business Ethics**

See BUS 264A.

3 units

PHIL 281. Philosophy of Education

See EDTE 281.

3 units

PHIL 290. Advanced Seminar in a Selected Philosopher or Tradition

An exhaustive and detailed study of the entire, or most significant, writings of some outstanding philosopher or philosophical tradition. Course is repeatable for credit when seminar topic is different.

Prerequisite: Nine units of Philosophy including PHIL 70A and PHIL 70B or instructor consent.
Repeatable for credit
3 units

PHIL 291. Advanced Seminar in Epistemology and Metaphysics

Classical or contemporary problems in knowledge and reality. Course is repeatable for credit when seminar topic is different.

Prerequisite: At least one upper division course in epistemology or metaphysics, or instructor consent.
Repeatable for credit
3 units

PHIL 292. Advanced Seminar in Ethics or Aesthetics

Classic or contemporary problems in some value area such as that of moral or aesthetic value. Course is repeatable for credit when seminar topic is different.

Prerequisite: At least one upper division course in ethics or value theory, or instructor consent.
Repeatable for credit
3 units

PHIL 293. Advanced Seminar in Logical Theory

Concepts of logic, such as truth and inference, considered on an advanced level. Course is repeatable for credit when seminar topic is different.

Prerequisite: PHIL 9, PHIL 157 or instructor consent.
Repeatable for credit
3 units

PHIL 298. Special Studies

Prerequisite: Advisor consent.
Repeatable for credit
Credit / No Credit
1-3 units

PHIL 299. Master's Thesis

Prerequisite: Advisor consent.
Repeatable for credit
Credit/No Credit/Report in Progress
3 units

Physics and Astronomy

College of Science

Science 148
408-924-5210

Professors

Ramendra D. Bahuguna
Joseph F. Becker
Carel Boekema
Jerome Finkelstein
Alejandro L. Garcia
Patrick J. Hamill
Brian W. Holmes
Lui Lam
Kiumars Parvin, Chair
Leslie J. Tomley

Associate Professors

Michael J. Kaufman
Kenneth Wharton

Assistant Professors

Natalie Batalha
Peter T. Beyersdorf
Monika E. Kress

Adjunct Professors

Paul Bolton
Timothy Castellano
Friedemann Freund
Bishun Khare

Curricula

- BA, Physics
- BA, Physics, Preparation for Teaching
- BS, Physics
- Minor, Physics
- Minor, Astronomy
- MS, Physics
- MS, Physics,
Concentration in Computational Physics

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.

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.

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, 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 (9)

Major Supporting Requirements

26

CHEM 001A and CHEM 001B (10); MATH 030, MATH 031, MATH 032 and MATH 133A (13); three additional units of upper division mathematics (3)

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.

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.

Physical Education

2

Preparation for the Major and Supporting Courses

40

BIOC 020 and BIOC 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)

Requirements in the Major

44

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)

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.

MS – Physics

Graduate Advisor: Dr. Peter Beyersdorf

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

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/gradstudies. Competency in written English can also be demonstrated by passing either a 100W course or the waiver exam.

MS – Physics

Semester Units

Plan A (with Thesis)	30
PHYS 205, PHYS 210, PHYS 230, PHYS 263A and two other letter-graded graduate physics courses (with a "B" average or better) 18	
PHYS 299 1-4	
100- or 200-level course electives in mathematics, science, and engineering, chosen with the approval of the graduate advisor (a maximum of six CR/NC units is permitted) 8-11	
Plan B (without Thesis)	30
Requirements for Plan B are identical to Plan A except that a thesis is not required and 12 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

Courses**ASTRONOMY****LOWER DIVISION****ASTR 010. Descriptive Astronomy**

A generally non-mathematical examination of principles, facts and logic of astronomy, emphasizing arrangement, origin and evolution of the solar system.

GE: B1
3 units

UPPER DIVISION**ASTR 101. Modern Astronomy**

A principally non-mathematical discussion of current scientific observational and theoretical understanding of the origin and evolution of stars, galaxies and the cosmos.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing and a college physical science course. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: R
3 units

ASTR 102. Astronomy Lab

Experimental examination of specific astronomical topics: coordinate systems, constellations, etc. Astronomical applications of general physical principles: gravitational motion, stellar spectra, etc.

Prerequisite: Completion of or concurrent enrollment in a college-level astronomy course.
Lab 3 hours.
GE: B3
1 unit

ASTR 117A. Astrophysics I

Quantitative discussion of the solar system and other planetary systems; orbital properties and physical nature of the interiors, surfaces and atmospheres of the planets; moons, rings, asteroids and comets.

Prerequisite: PHYS 70, PHYS 71, PHYS 72 (PHYS 50, PHYS 51, PHYS 52, PHYS 53 may be substituted).
3 units

ASTR 117B. Astrophysics II

Quantitative introduction to stellar astronomy; observed stellar properties and theory of stellar-structure and evolution; interstellar medium, galaxies and cosmology.

Prerequisite: PHYS 70, PHYS 71, PHYS 72, and ASTR 117A.
3 units

ASTR 155. Topics in Modern Astronomy and Astrophysics

Selected topics in astronomy and astrophysics. Topics vary each semester, and may include observational, computational or analytic techniques. Course is repeatable for a total of 9 units.

Prerequisite: ASTR 117A and ASTR 117B.
Repeatable for credit
3 units

PHYSICS**LOWER DIVISION****PHYS 001. Elementary Physics**

Mechanics, energy, electricity, magnetism, optics, atomic and nuclear physics, properties of matter; emphasizes practical applications of physics principles to contemporary problems.

GE: B1
3 units

PHYS 001L. Elementary Physics Lab

Selected experiments on topics covered in Phys 1.

Co-requisite: PHYS 1.
Lab 3 hours.
GE: B3
1 unit

PHYS 002A. Fundamentals of Physics

First semester of a two-semester sequence that is non-calculus based and covers the topics of mechanics, heat, and sound.

Prerequisite: Algebra.
Lecture 3 hours/lab 3 hours.
Note: Year course.
CAN PHYS A
4 units

PHYS 002B. Fundamentals of Physics

Electricity and magnetism, optics and atomic structure.

Prerequisite: PHYS 2A (with grade of "C-" or better).
Lecture 3 hours/lab 3 hours.
CAN PHYS A
4 units

PHYS 035. Introduction to Physical Sciences

See CHEM 035.

GE: B1+B3
3 units

PHYS 050. General Physics/Mechanics

Particle Kinematics and dynamics, work and energy, linear momentum, rotational motion, fluids, vibrations, and sound.

Prerequisite: MATH 30 or MATH 30P, with a grade of "C-" or better.
Lecture 3 hours/lab 3 hours.
CAN PHYS B
4 units

PHYS 051. General Physics/Electricity and Magnetism

Electric and magnetic fields, dc and ac circuits, electromagnetic waves.

Prerequisite: PHYS 50 or PHYS 70, MATH 31, both with grades of "C-" or better.
Lecture 3 hours/lab 3 hours.
CAN PHYS B
4 units

PHYS 052. General Physics/Heat and Light

Temperature, heat, thermodynamics, kinetic theory, geometric and physical optics.

Prerequisite: PHYS 50 or PHYS 70 with grades of "C-" or better.
Lecture 3 hours/lab 3 hours.
CAN PHYS B
4 units

PHYS 053. General Physics/Atomic Physics

Introduction to quantum physics emphasizing electronic structure of atoms and solids, radiation and relativity.

Prerequisite: PHYS 70 and PHYS 71; or PHYS 50, PHYS 51 and PHYS 52; CHEM 1A, (with grades of "C-" or better).
2 units

PHYS 070. Mechanics

Newtonian dynamics; conservation laws for energy, momentum and angular momentum; oscillations and waves; kinetic theory and thermodynamics. Course is designed for students well prepared in Physics.

Prerequisite: High school Physics with grade of B or better; Physics Placement Exam; MATH 30 or MATH 30P with a grade of "C-" or better.
Lecture 3 hours/lab 3 hours.
4 units

PHYS 071. Electricity and Magnetism

Electric charge and current, electric and magnetic fields, basic dc and ac circuits, electromagnetic waves.

Prerequisite: PHYS 70 and MATH 31, both with grades of "C-" or better.
Lecture 3 hours/lab 3 hours.
4 units

PHYS 072. Atomic Physics

Geometric and physical optics, introduction to quantum physics emphasizing electronic structure of atoms and solids, nuclear physics and particle physics.

Prerequisite: PHYS 70; MATH 31; CHEM 1A, with a grade of "C-" or better.
4 units

UPPER DIVISION**PHYS 105A. Advanced Mechanics**

Dynamics of particles: oscillations, Lagrange's and Hamilton's equations, central-force motion.

Prerequisite: PHYS 70 or PHYS 50; MATH 32.
Corequisite: MATH 133A.
Note: Year course.
3 units

PHYS 105B. Advanced Mechanics

Dynamics of systems of particles: collisions, rigid body rotations, non-inertial frames, coupled oscillations, waves.

Prerequisite: PHYS 70 or PHYS 50; MATH 32.
Co-requisite: Math 133A.
3 units

PHYS 110A. Electricity and Magnetism

Theories of electrostatics, magnetostatics, electrodynamics and electromagnetic waves.

Prerequisite: PHYS 71 or PHYS 51; MATH 112 and MATH 133A.
Note: Year course.
3 units

PHYS 110B. Electricity and Magnetism

Theories of electrostatics, magnetostatics, electrodynamics and electromagnetic waves.

Prerequisite: PHYS 71 or PHYS 51; MATH 112 and MATH 133A.
3 units

PHYS 120A. Laboratory Electronics for Scientists I

The characteristics of basic analog and digital electronic circuits used in a scientific laboratory. Topics include transistors, operational amplifiers, digital electronic circuits, and computer data acquisition.

Prerequisite: PHYS 2B, PHYS 71, or PHYS 51.
Seminar 2 hours/lab 3 hours.
3 units

PHYS 120B. Intermediate Physics Lab: Modern Physics

Laboratory to complement Physic 122. Introduction to some of the advanced research equipment in the School of Science. Selected experiments in photon interactions, atomic optical and X-ray spectra, magnetic resonance, and nuclear structure.

Pre/Corequisite: PHYS 72 or PHYS 122.
Seminar 1 hour/lab 3 hours.
2 units

PHYS 120C. Advanced Physics Lab: Optics

Experiments in optics covering geometrical optics, interference, holography, diffraction and polarization.

Prerequisite: PHYS 58.
Lecture 1 hour/lab 3 hours.
2 units

PHYS 120D. Advanced Physics Lab: Lasers

Experiments involving various types of cw and pulsed lasers. Measurements of output characteristics of lasers; study of design parameters and experiments illustrating applications of lasers.

Prerequisite: PHYS 120A, PHYS 120C and PHYS 168.
Seminar 1 hour/lab 3 hours.
2 units

PHYS 120I. Laboratory Electronics for Scientists II: Instrumentation

Sensors, digital circuits and computer interfacing.

Prerequisite: PHYS 120A; CS 49.
Seminar 2 hour/lab 3 hours.
3 units

PHYS 120S. Advanced Physics Lab: Solid State Physics

Experiments in x-ray crystallography, thermal conductivity, electrical resistivity, Hall effect, optical transmission, low temperature physics, superconductivity, magnetic and optical properties of solids. Course is repeatable for a total of 4 units.

Pre/Corequisite: PHYS 120A and PHYS 175A.
Lab 6 hours.
Offered only occasionally.
Repeatable for credit
2 units

PHYS 121S. Radiation Safety

See NUCS 121S.

1-2 units

PHYS 122. Modern Physics

Relativistic mechanics, particle-wave duality, introduction to quantum theory of atoms, nuclei and solids.

Prerequisite: PHYS 72 or PHYS 52.
3 units

PHYS 126. Introduction to Nuclear Science

See CHEM 126.

3 units

PHYS 127. Nuclear Science Lab

See CHEM 127.

ABC/No Credit
3 units

PHYS 140. Computational Methods in Physics

An introduction to the programming of algorithms and numerical techniques pertinent to physical systems.

Prerequisite: PHYS 50, PHYS 51, PHYS 52, PHYS 53 or PHYS 70, PHYS 71, PHYS 72, or equivalent.
Seminar 2 hours/lab 3 hours.
3 units

PHYS 158. Modern Optics

Thin and thick lens systems. Double and multiple beam interference, holography, Fraunhofer and Fresnel diffraction, Fourier optics, spatial filtering, polarization and birefringence.

Prerequisite: PHYS 72 or PHYS 52; MATH 32.
3 units

PHYS 160. Thermodynamics and Statistical Physics

The laws of thermodynamics and kinetic theory with introduction to statistical mechanics.

Prerequisite: PHYS 72 or PHYS 52; MATH 32.
3 units

PHYS 163. Quantum Mechanics

General principles of quantum theories. Wave functions, operator algebra and approximation methods. Applications to atomic structure and solid state physics.

Prerequisite: PHYS 122, MATH 133A.
3 units

PHYS 166. Physics of Music

Physical, mathematical and perceptual foundations of music. Includes musical instruments, hearing, harmony, room acoustics, sound analysis, synthesis and reproduction.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing; ability to play a musical instrument or instructor consent.

For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

Lecture 2 hours/lab 3 hours.

GE: R
3 units

PHYS 168. Lasers

Properties of lasers and Gaussian light beams. Principles of laser operation and design.

Application of lasers.

Prerequisite: PHYS 122 and PHYS 158.
Corequisite: PHYS 110B.
3 units

PHYS 175A. Solid State Physics

Crystal structure, crystal binding, lattice vibrations and thermal properties, free electron model, energy bands, electrical properties and semiconductors.

Prerequisite: PHYS 163.
3 units

PHYS 175B. Solid State Physics

Superconductivity, optical properties of solids, magnetic properties of solids, noncrystalline solids and surface physics.

Prerequisite: PHYS 175A.
Offered only occasionally.
3 units

PHYS 180. Individual Studies

Advanced work in special fields.

Prerequisite: Physics major or minor.
Maximum 4 units of 180/184 may be applied toward graduation.

Repeatable for credit
Credit / No Credit
1-4 units

PHYS 184. Directed Reading

Assigned readings of selected books, journals and special papers to fill gaps in training or for contact with new fields. Weekly reports and conferences.

Maximum 4 units of 180/184 may be applied toward graduation.
Repeatable for credit
Credit / No Credit
1-3 units

GRADUATE**PHYS 205. Advanced Dynamics**

Generalized methods and selected topics in classical mechanics.

Prerequisite: PHYS 105B, MATH 112 and MATH 133B.
3 units

PHYS 208. Introduction to Electro-Optics

This course introduces the physical principles of electro-optics including modulators (electro- and acousto-optic), non-linear optics, semiconductor lasers, optical detection and integrated optics with applications.

Prerequisite: PHYS 168 (or equivalent) or instructor consent.
3 units

PHYS 210. Electromagnetic Theory

Topics in electrostatics and magnetostatics; Maxwell equations; solutions of boundary-value problems using methods of images and Green's function; boundary-value problems in magnetostatics; electromagnetic plane waves and wave propagation in a dielectric media; Fresnel Equations.

Prerequisite: PHYS 230.
3 units

PHYS 230. Methods in Mathematical Physics

Partial differential equations and special functions: Bessel functions, Legendre polynomials, spherical harmonics; Green's functions; complex variables and contour integrations; matrices and eigenvalue problems; Fourier and Laplace transforms.

Prerequisite: PHYS 105B, PHYS 110B, PHYS 160, PHYS 163, MATH 133B.
3 units

PHYS 240. Computational Physics

Numerical techniques and computational methods applied to solving problems from various branches of physics.

Prerequisite: PHYS 105B, PHYS 110B, PHYS 163 and a programming language.
3 units

PHYS 248. Optical Metrology

Partial coherence, classical interferometry, laser speckle method, holographic interferometry, moiré method, roughness measurement and other optical metrology techniques.

Prerequisite: PHYS 158.
3 units

PHYS 250. Semiconductor Physics

Crystal structure of semiconductors, electron band structure, phonons, impurity levels, optical properties, semiconductor devices and other current topics; use of computational methods in calculating semiconductor properties.

Prerequisite: PHYS 110B, PHYS 163, PHYS 175A or instructor consent.
3 units

PHYS 255. Advanced Physics

Selected topics in physics. Topics vary each semester. Course is repeatable when content changes.

Prerequisite: Suitable upper division background in physics and mathematics.
Repeatable for credit
3 units

PHYS 255C. Celestial Mechanics

Basic concepts in celestial mechanics emphasizing orbital mechanics and the calculation of orbital perturbation. Topics covered include dynamical principles, potential theory, planetary equations, the disturbing function, Lagrange's perturbation equations and geopotential perturbations.

Prerequisite: Senior or graduate standing.
3 units

PHYS 258. Optics

Fourier optics, diffraction theory, imaging and image enhancement, holography and information processing.

Prerequisite: PHYS 158 and MATH 133A.
3 units

PHYS 260. Statistical Mechanics

Classical and quantum statistics with applications to properties of matter. Principles of thermodynamics.

Prerequisite: PHYS 160 and PHYS 163.
3 units

PHYS 263A. Quantum Theory

Postulates of quantum theory. The Schroedinger equation and its solution for simple physical systems. Heisenberg's matrix formulation of quantum mechanics. Approximation methods: Time dependent and time independent perturbation theory. Variational method.

Prerequisite: PHYS 163, PHYS 230.
3 units

PHYS 263B. Quantum Theory

Scattering theory: Partial wave expansion. Born approximation. Green's function method. Quantum theory of angular momentum. The Klein-Gordon and Dirac equations. Systems of identical particles. Semi-classical and quantum theory of radiation.

Prerequisite: PHYS 263A.
3 units

PHYS 265. Elementary Particles and Nuclear Physics

Elementary particle production and transformations, detectors and accelerators, nuclear structure and nuclear reactions.

Prerequisite: PHYS 163.
3 units

PHYS 268. Laser Spectroscopy

Importance of spectroscopy. Interaction of radiation with matter. Instrumentation for laser spectroscopy. Examples of various techniques, cw and pulsed.

Prerequisite: PHYS 110B, PHYS 158 or instructor consent.
3 units

PHYS 275. Solid State Physics

Properties of crystals; electric, magnetic and thermal properties of solids.

Prerequisite: PHYS 175A and PHYS 263A or instructor consent.
3 units

PHYS 277. Superconductivity and Magnetism in Solids

Study of superconductivity and magnetism in solids. Fundamental and technological importance. Type I and Type II superconductivity. BCS theory. High-T_c superconductivity. Interplay of superconductivity and magnetism. Origins and characterization of magnetization types.

Prerequisite: PHYS 175A, PHYS 275 or instructor consent.
Repeatable for credit
3 units

PHYS 285. Seminar

Meetings for the presentation and discussion of advanced studies in special fields including work by the faculty, guest investigators and graduate students. Topics will vary each semester.

Credit / No Credit
1 unit

PHYS 298. Research

Advanced individual work in physics.

Prerequisite: Instructor consent.
Repeatable for credit
Credit / No Credit
1-4 units

PHYS 299. Master's Thesis

Prerequisite: Admission to candidacy for the master's degree.

Repeatable for credit
Credit/No Credit/Report in Progress
1-4 units

Political Science

College of Social Sciences

Clark Hall 471
408-924-5550

Professors

James C. Brent, Chair
Terry L. Christensen
Sharyl N. Cross
Constantine Danopoulos
Larry N. Gerston
Peter J. Haas
Kenneth B. Peter
Ronald D. Sylvia

Associate Professors

Frances L. Edwards
Cobie Kwasi Harris
Kenneth Nuger

Assistant Professors

Melinda Jackson
Lawrence Quill

Curricula

- BA, Political Science
- Minor, Political Science
- Minor, Public Administration and Public Policy
- MPA, Master of Public Administration

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.

Getting the political science classes you need won't be a problem. We schedule classes for the convenience of students and offer enough sections to keep all necessary classes open. We also offer night classes and rotate them so that students who can attend only at night can get the classes they require.

Any questions? Phone us at 408-924-5550 or check us out on the World Wide Web at www.sjsu.edu/depts/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.	
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. 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 political science courses	

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. Deficiencies in preparation must be removed before admission to candidacy and before completion of 12 hours of MPA courses.

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

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 www.sjsu.edu/gradstudies.

Completing Requirements

As soon as students are admitted to classified standing, they should meet with an advisor to draft an interim program itemizing 36 units of coursework as specified below.

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 PADM 297 and execute a project serving as the basis for a substantial paper conforming to department standards by enrolling in PADM 298 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.
PADM 210, PADM 212, PADM 213, PADM 214 and PADM 218

Required Advanced Seminars 12

Complete three courses from: PADM 202, PADM 215, PADM 217, PADM 219, PADM 223, PADM 295 (as approved)

Electives 6-9

Depending on thesis or project arrangements, electives may include additional MPA courses or approved 100- or 200-level courses in political science or other departments.

Thesis or Special Problems 3-6**Plan A** 3-6
PADM 299**Plan B** 3-6
PADM 298**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 in addition to the required 36 units and register for PADM 281.

Evidence of competence in written English is necessary to qualify for the master's degree.

Courses**POLITICAL SCIENCE****LOWER DIVISION****POLS 001. American Government**

Institutions and processes of American government and democracy; the U.S. Constitution and California state and local government.

Satisfies American Institutions requirements in American and California government.
CAN GOVT 2

3 units

POLS 002. Introduction to Comparative Politics

Comparative analysis of different kinds of political systems; their political institutions, processes and policies; the environments in which they occur and their consequences.

3 units

POLS 003. Introduction to Political Thought

Thinking critically about the classic problems of politics; learning how to interpret, discuss and write about historical and contemporary political thought.

GE: C2

3 units

POLS 004. Introduction to International Relations

Introductory survey of major topics in international relations, including global, national and individual causes of war and peace, international cooperation, north-south relations and political economy.

GE: D3

3 units

POLS 015A. U.S. History and Government

See HIST 015A.

GE: M6

3 units

POLS 015B. U.S. History and Government

See HIST 015B.

GE: M7

3 units

POLS 020. Controversial Legal Issues

Basic concepts in critical thinking as demonstrated in legal reasoning and analysis of contemporary legal issues possibly including abortion, drug testing, offensive speech, affirmative action, gender and sexual preference discrimination, school prayer and pornography.

GE: A3

3 units

UPPER DIVISION**POLS 100W. Writing Workshop**

Writing skills for majors in political science. Basic materials; research; memos and research reports, press releases, analyses of political/electoral behavior, political speeches.

Prerequisite: ENGL 1B (with a grade of C or better); Completion of core GE, satisfaction of Writing Skills Test and upper division standing.

Should be taken junior year.

ABC/No Credit

GE: Z

3 units

POLS 102. State Government and Politics

Origins, development, modern organization and contemporary problems of state government, with special reference to California.

Prerequisite: Upper division standing or instructor consent.

Satisfies American Institutions requirement in California government.

3 units

POLS 103. Local Government and Politics

Government and politics of communities, cities, counties and urban regions, including power inside and outside city hall and other institutions of local government.

Prerequisite: Upper division standing or instructor consent.

3 units

POLS 105. The Legislative Process

Political decision-making in Congress and other legislative agencies. Includes organizational and procedural problems of modern legislatures and problems of legislative-executive relations.

Prerequisite: Upper division standing or instructor consent.

3 units

POLS 106. The United States Presidency

Selection, organization, powers and functioning of the United States presidency.

Prerequisite: Upper division standing or instructor consent.

3 units

POLS 107. Politics and Public Opinion

Relations between government and opinions of groups and individuals. U.S. political culture. Political socialization: how opinions are formed. Socialization agents: parents, peers, the media, class, religion, education. Measurement of public opinion: survey research and political polling.

Prerequisite: Upper division standing or instructor consent.

3 units

POLS 108. Political Participation

Political participation in the United States, focusing on civic engagement through parties, interest groups, campaigns, and elections.

3 units

POLS 109. Women and Politics

The significance of gender in policy-making and political behavior. Comparative status of women in various polities; emphasis on the United States.

Prerequisite: Upper division standing or instructor consent.

3 units

POLS 110. Ethnic Politics

How ethnic groups shape political culture and public policy. U.S. ethnic diversity, from WASPs (White Anglo-Saxon Protestants) to multiculturalism (Blacks, White ethnics, Jews, Hispanics, Asian Americans). Voting behavior and political participation patterns. Religion as it affects U.S. politics.

Prerequisite: Upper division standing or instructor consent.

3 units

POLS 114. Introduction to Public Administration

Organizing assumptions, concepts and definitions underlying public administration. Application of public management theories to government efforts at national, state and local levels to translate public policies into action.

Prerequisite: Upper division standing or instructor consent.

3 units

POLS 120. Law and Society

Social and philosophical foundations of law and legal systems and development of legal institutions in various cultures. Anglo-American law and administration of justice in the U.S. emphasized.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: S

3 units

POLS 121A. The Supreme Court: Constitutional Law

The U.S. Supreme Court, its processes and place in the U.S. political system. Includes judicial policy-making through cases on judicial review, separation of powers, federalism, and the commerce, tax and treaty powers.

Prerequisite: Upper division standing or instructor consent.

3 units

POLS 121B. Civil Liberties: Constitutional Law

Analysis of leading Supreme Court decisions regarding the Bill of Rights, due process and equal protection clauses of the U.S. Constitution. Role of the U.S. Supreme Court in development of individual rights.

Prerequisite: Upper division standing or instructor consent.

3 units

POLS 121C. Constitutional Law: Civil Rights

This course analyzes the constitution as it relates to discrimination in both the public and private sector. Discrimination based on race, sex, sexual orientation, religion, national origin, age and other criteria are the main criteria of constitutional analysis.

Prerequisite: Upper division standing

3 units

POLS 122. Judicial Politics

American courts analyzed as political institutions. Highlights the role played by personality, structure and politics in the making of judicial policy. Topics include judicial selection, agenda-setting, decision-making and relations with other branches of government.

Prerequisite: Upper division standing or instructor consent.

3 units

POLS 124. Introduction to Environmental Law

See ENVS 124.

3 units

POLS 130. Making Public Policy

Public policy formation related to economic, social and political problems; governmental planning and programming.

Prerequisite: Upper division standing or instructor consent.

3 units

POLS 135. U.S. Environmental Policy

Inquiry focuses on state of the environment, public attitudes toward the problem, interest groups involved in formulation of policy, the response of government leaders to the problem and what the future outlook is for addressing the agenda.

Prerequisite: Upper division standing or instructor consent.

3 units

POLS 136. History of Terrorism in the Modern World

See HIST 136.

3 units

POLS 137. California in Historical and Social Scientific Perspectives

See SOCS 137.

3 units

POLS 138. United States in Historical and Social Science Perspectives

See SOCS 138.

GE: S

3 units

POLS 140. European Union

The politics, processes, and critical issues of European integration and unification.

Prerequisite: Upper division standing or instructor consent.

3 units

POLS 141. Eurasian Politics

Political developments in Russia and Soviet Successor States, with emphasis on democratization, privatization, and international relations with the European Union and the United States.

Prerequisite: Upper division standing or instructor consent.

3 units

POLS 142. African Politics

Political structures and policies of Africa, emphasizing Africa south of the Sahara. African nationalism and its impact.

Prerequisite: Upper division standing or instructor consent.

3 units

POLS 144. Middle Eastern Politics

Political systems of the Middle East. The significance of Islam and the role of the region in global politics.

Prerequisite: Upper division standing or instructor consent.

3 units

POLS 145. Asian Politics

Political systems of Asia and critical issues among Asian states.

Prerequisite: Upper division standing or instructor consent.

3 units

POLS 146. Latin American Politics

Political development in Mexico, Central and South America focusing on recent transitions to democracy, civil-military relations and economic integration.

Prerequisite: Upper division standing or instructor consent.

3 units

POLS 147. Globalization

Comparative exploration of the complex issues of poverty, justice, and uneven economic and political development in the Third World in a globalized economy.

Prerequisite: Upper division standing or instructor consent.

3 units

POLS 148. Nationalism and Comparative Political Cultures

Comparative exploration and analysis of the origin, nature, and importance of nationalism and political culture in Western and non-Western settings.

Prerequisite: Upper division standing or instructor consent.

3 units

POLS 149. Comparative Public Policy and Administration

Ideologies, institutions and public policy making in a comparative context. Policy making process in various countries, from emerging issues to choices to implementation and subsequent impact on political systems.

Prerequisite: Upper division standing or instructor consent.
3 units

POLS 150. War and Peace

Fundamental human questions about causes of war, definitions of peace and approaches toward achieving peace from perspectives of historical and contemporary thinkers, including philosophers, political leaders, military strategists and diplomats.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required. Not counted as a core course in the international relations subfield.

GE: V
3 units

POLS 152A. International Organizations and NGOs

International and functional organizations and regimes analyzed in terms of origins, structure, functions and policies, such as the United Nations, International Monetary Fund, World Trade Organization, NATO, and Red Cross.

Prerequisite: POLS 4 or instructor consent.
3 units

POLS 152B. Model United Nations

Structure and operations of the United Nations explored and analyzed through participation in annual U.N. simulation.

Prerequisite: POLS 152A or instructor consent.
Repeatable for credit
Credit / No Credit
3 units

POLS 154. U.S. Foreign Policy: Formulation and Administration

Factors that shape American foreign policy decision-making: organization, administration, parties, groups and public opinion. Relations among government branches and democratic responsibility in foreign policy making.

3 units

POLS 155. International Political Economy

Examines the interconnection between economics and international relations. Topics include philosophical traditions and historical roots of the modern world economy; the international monetary system; the role of trade and multinational corporations in international relations; European Union; energy issues; and globalization.

Prerequisite: Upper division standing or instructor consent.
3 units

POLS 156. Islam, Politics and the West

See RELS 156.
3 units

POLS 160A. Classical Political Thought

Critical examination of the foundations of Western political thought and the continuing influence of these foundations; sources chosen from among a variety of pre-Renaissance traditions and include writers such as Plato, Aristotle, Augustine and Aquinas.

Prerequisite: Upper division standing or instructor consent.
3 units

POLS 160B. Modern Political Thought

The basis of the modern state and society as interpreted by political thought between (and including) the Renaissance and the French Revolution; this key period includes writers such as Machiavelli, Hobbes, Locke and Rousseau.

Prerequisite: Upper division standing or instructor consent.
3 units

POLS 160C. Recent Political Thought

The roots of today's politics in the ideas and writers of the nineteenth and twentieth centuries; sources drawn from a variety of recent traditions such as democratic theory, Marxism, political psychology and political sociology.

Prerequisite: Upper division standing or instructor consent.
3 units

POLS 163. American Political Thought

Critical examination of the origins and development of American politics as seen through theorists, concepts and forces which have shaped American political consciousness.

Prerequisite: Upper division standing or instructor consent.
3 units

POLS 180. Individual Studies

Individual study for advanced work in areas where no courses are offered.

Prerequisite: Appropriate courses, instructor consent and department chair consent.
Repeatable for credit
Credit / No Credit
1-4 units

POLS 181. Internships

Supervised practical experience in public administration or politics. Course is repeatable for credit when internship is in a substantially different area.

Prerequisite: POLS 100W and instructor consent.
Repeatable for credit
Credit / No Credit
3 units

POLS 184. Directed Reading

Program of reading and writing created through student/faculty consultation in areas not covered by other courses. Course is not repeatable for credit.

Prerequisite: Appropriate courses, instructor consent and department chair consent.
1-4 units

POLS 190. Senior Seminar

Integrative capstone course and culminating experience for political science majors focusing on the advanced study of selected topics.

Prerequisite: POLS 100W or instructor consent.
Repeatable for credit
3 units

POLS 190H. Honors Thesis

Preparation and writing of an original project.

Prerequisite: Senior standing. 3.2 GPA and instructor consent.
1 unit

POLS 195A. Political Inquiry

Introduction to a variety of methods used by contemporary political scientists to comprehend the world of politics. Examines assumptions, logic and usefulness of a scientific study of politics and other approaches to understanding political phenomena.

Prerequisite: Upper division standing or instructor consent.
Should be taken junior year.
3 units

POLS 199. Current Political Issues

Major political issues of the day. Topics vary each semester. Course is repeatable for credit with instructor consent.

Repeatable for credit
1-3 units

PUBLIC ADMINISTRATION**GRADUATE****PADM 201. Computer Applications in Public Administration**

An examination of the software environment and applications related to policy analysis and public management. Discussion of policy issues related to management information systems (MIS) and decision support systems (DSS).

3 units

PADM 202. Power and Politics in Silicon Valley

Research and discussion of subjects in the field of state and local government and politics, including problems in urban and regional organization and administration.

Prerequisite: POLS 101 or POLS 102 or POLS 103 or equivalent.
3 units

PADM 210. Introduction to Public Administration

A broad overview of public administration, including policy analysis, budgeting, personnel, organization, leadership, decision-making and ethics in a political environment. Examination of the theory and application of public management practices at all levels of government.

3 units

PADM 211. Public Administration and the Political Process

A study of the mutual relationships between American politics and public administration. Special focus on the nature of political factors in administration, methods of coping with politics and ethical considerations.

Repeatable for credit
3 units

PADM 212. Administrative Research Methods

The study and application of principles and methods of social science research and evaluation in a public administration context. Emphasis on learning research designs and using statistics and computers.

Prerequisite: Statistics and instructor consent.
Repeatable for credit
3 units

PADM 213. Policy Analysis and Evaluation

An examination of the application of analytical and administrative tools to solving public problems. Study of the processes of policy formulation and the research and political tools necessary to assess program effectiveness.

Prerequisite: Statistics and instructor consent.
Repeatable for credit
3 units

PADM 214. Public Management

A study of current theory, techniques and practices for effectively managing public service organizations. Emphasis on planning, implementation and evaluation processes.

Prerequisite: Statistics and instructor consent.
Repeatable for credit
3 units

PADM 215. Public Personnel Administration

An overview of personnel management in a political environment and its role in maintaining a democratic society. Methods and problems of job analysis, compensation, staffing, EEO, evaluation, training and union relations.

Prerequisite: POLS 114 or PADM 210.

Repeatable for credit

3 units

PADM 217. Organizational Theory

Analysis and application of theories about organizations, including organizational goals, structures, authority, leadership, decision patterns and communications. Emphasis on methods of change and differences between the public and private sectors.

Prerequisite: POLS 114 or PADM 210.

Repeatable for credit

3 units

PADM 218. Public Budgeting

A study of current theory, techniques and practice of public budgeting for political decision-making, planning and management. Focus on executive and legislative budget processes, reform efforts, public choice analysis, financial processes and the role of accounting.

Prerequisite: POLS 114 or PADM 210; ECON 1A or ECON 1B (or equivalent).

3 units

PADM 219. Public Financial Administration

An overview of public financial administration, including microeconomic concepts and techniques, tax theory and policy, user charges, inter-governmental transfers, debt administration and risk management in a political environment.

Prerequisite: POLS 118 or PADM 218.

3 units

PADM 223. Law and Public Administration

An overview of legal and political processes affecting relationships among the public, government institutions, administrative agencies and the courts. Focus on major cases related to administrative agency use of rules and orders to implement public policy.

3 units

PADM 228. Urban Community Development

See URBP 228.

3 units

PADM 281. Public Administration Internship

Supervised practical experience in public administration. Focus on integrating student work experiences with the academic program by means of seminars and consultation.

Prerequisite: Instructor consent.

Credit / No Credit

3 units

PADM 295. Topics in Public Administration

An exploration of current theories, problems and techniques in a selected major topic of current importance in public administration.

Repeatable for credit

1-3 units

PADM 297. Advanced Seminar in Public Management

Advanced study using cases to relate principles and theories of public administration to concrete, real-world problems. Development of a project serving as the basis for a substantial paper.

Prerequisite: Classified standing.

3 units

PADM 298. Special Problems

Advanced individual research and projects.

Prerequisite: Instructor consent and department chairperson approval.

Credit / No Credit

1-4 units

PADM 299. Master's Thesis

Independent research conducted under the supervision of a permanent faculty member and two other qualified persons. Emphasis on applying administrative concepts and analytical skills to actual problems of policy and administration in the public sector.

Repeatable for credit

Credit/No Credit/Report in Progress

3 units

Psychology

College of Social Sciences

Dudley Moorhead Hall 157
408-924-5600
<http://psych.sjsu.edu/>

Professors

Arlene Asuncion
Sheila Bienenfeld
Glenn Callaghan
Laree A. Huntsman
Kevin Jordan
Ellyn Kaschak
Robert J. Pellegrini
Howard Tokunaga

Associate Professors

Mildred Alvarez
Cheryl Chancellor-Freeland
Sharon Glazer
Lynda Heiden
Megumi Hosoda
Elena Klaw
Annabel Prins
Ronald Rogers
Mark Van Selst

Assistant Professors

Gregory Feist
Cary Feria
Jennifer Gregg
Sean Laraway
Clifton M. Oyamot, Jr

Curricula

- BA, Psychology
- BS, Psychology
- BA, Behavioral Science, Double Major in Psychology
- Minor, Psychology
- MA, Psychology
- MS, Psychology, Concentration in Clinical Psychology
- MS, Psychology, Concentration in Industrial/Organizational Psychology

The BA – Psychology provides students with useful and marketable skills which 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 which 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.

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 Colloquia (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 (90% of the external grant funding received by the college of social science, and 34% of the external grant funding received by the university). 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.psych.sjsu.edu 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 coursework 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, and a lab technician is available to construct additional equipment. 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.psych.sjsu.edu.

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 coursework; (2) completion of PSYC 117, PSYC 120, PSYC 121(A, B, or C), 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. Students majoring in behavioral science may also fulfill the requirements of the behavioral science/psychology double major in Psychology and Behavioral Science. The requirements for the BA – Behavioral Science are located under the Behavioral Science Program listing in this catalog. The requirements for the behavioral science/psychology double major are listed in the Behavioral Science section. Students interested in further information about the double major should 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 coursework. 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.psyc.sjsu.edu 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 27

PSYC 100W, PSYC 102 and PSYC 110 (9); PSYC 135, PSYC 155 or PSYC 158 (3); PSYC 139 or PSYC 154 (3); PSYC 117 or STAT 115 (3); PSYC 120 (3); PSYC 129, PSYC 160 or PSYC 170 (3); PSYC 190 or PSYC 195 (3)

Psychology Electives 9

Six units of upper division psychology courses (6) and three units of upper or lower division psychology courses (3).

Electives 27-28

Total Units Required 120

BS – Psychology

The BS degree is most appropriate for those students planning a research career (including most students intending to pursue a Ph.D. in Psychology) as well as those students using a psychology background as part of their preparation for medical school. In all cases, 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	12-14
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	53-55
Lower Division Core	9
PSYC 001, PSYC 030 and STAT 095	
Upper Division	44-46
PSYC 100W, PSYC 102, PSYC 110, PSYC 117, PSYC 120, PSYC 139, PSYC 154 and STAT 115 (24); 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 (4); PSYC 190 or PSYC 195 (3); one upper division psychology elective (2-3); one upper or lower division psychology elective (2-3)	
Electives	7-11
Total Units Required	120

**BA – Behavioral Science,
Double Major in Psychology**

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 coursework 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 Office of Graduate Studies and Research 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 coursework
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 Studies and Research website at www.sjsu.edu/gradstudies.

Semester Units

Core Domain	12
PSYC 280, STAT 125 and PSYC 220 (9); PSYC 240 or STAT 235 (3)	
Breadth Domain	12
PSYC 235 or PSYC 256 (3); PSYC 204, PSYC 230 and PSYC 254 (9)	

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 coursework, 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 <http://psych.sjsu.edu/>.

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.

Clinical Psychology Program

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 coursework and supervised fieldwork of 48 semester units meets most of the coursework 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

Industrial/Organizational Psychology Program

The industrial/organizational psychology program is designed to prepare students to work in a wide range of settings: including large industrial and service corporations; government agencies; organization and management consulting, training, development and research firms; and individual consulting practices. The program places particular emphasis on the ability to conduct applied, empirical research in organizations, using psychological and statistical methodologies.

Degree Requirements for the MS – Psychology Program

1. The student must complete a total of not less than 30 semester units for the industrial/organizational concentration, and 48 units in clinical and counseling psychology.
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 by 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. Candidates in both concentrations (Clinical and Industrial/Organizational) must demonstrate satisfactory performance on one or more final comprehensive examinations. These examinations shall be written, oral or both, as determined by the appropriate concentration advisory committee.
4. Students are required to demonstrate their competency with regard to writing skills as a requirement for the awarding of a master's degree. This requirement may be satisfied by: satisfactory completion of the CSU baccalaureate graduation requirement of competency in written English; or satisfactory completion, as a graduate student, of the San José State University undergraduate upper division English writing competency requirement by passing the writing workshop waiver examination or completing satisfactorily a writing workshop; or satisfactory completion of a designated graduate-level course in which at least 30% of the course grade is based upon a substantial written project; or approval by the Associate Vice President of Graduate Studies and Research of a professional publication for which the candidate was principal author. 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.

Courses

PSYCHOLOGY

LOWER DIVISION

PSYC 001. General Psychology

Study of perception, attention, learning, remembering, thinking, development of the individual, intelligence, aptitudes, emotions, motivation, adjustment and conflict; designed to give insight into oneself and others.

GE: D1

3 units

PSYC 018. Introduction to Research Methods

Psychological research methods, including experimental, correlational and observational investigations; illustrated by lab and field studies.

Prerequisite: STAT 95.

Lecture 2 hours/lab 2 hours.

3 units

PSYC 030. Introductory Psychobiology

Biological approaches to understanding behavior: evolutionary, genetic, neural and hormonal influences on normal and abnormal behavior.

Prerequisite: BIOL 21 or BIOL 65.

3 units

PSYC 082. Child and Adolescent Psychology

Psychological development of children from conception to adolescence. Observation required.

Prerequisite: Not counted as units in the Psychology Major. Satisfies requirement for candidates for Multiple Subject Teaching Credential.

GE: D1

3 units

UPPER DIVISION

PSYC 100W. Writing Workshop

Practice in improvement of writing skills appropriate to the broad field of psychology, including essays, reports and scholarly communication.

Prerequisite: ENGL 1B (with a grade of C or better); Completion of core GE, satisfaction of Writing Skills Test and upper division standing; PSYC 1; STAT 95 or senior standing.

ABC/No Credit

GE: Z

3 units

PSYC 102. Child Psychology

Psychological development of children from conception to adolescence, including perceptual, cognitive, personality and social development. Outside activities may be required.

Prerequisite: PSYC 1.

3 units

PSYC 105. Special Topics in Developmental Psychology

Intensive examination of current research and theory in a specialized area of developmental psychology. Course is repeatable for credit when course content changes.

Prerequisite: PSYC 102 (or equivalent).

Repeatable for credit

3 units

PSYC 107. Psychology of Women

Sex-role development of women in terms of bio-social factors involved in intellectual and personal-emotional functions. Psychological theory and research.

Prerequisite: PSYC 1.

3 units

PSYC 110. Abnormal Psychology

What is considered normal and abnormal in human behavior and psychological functioning. Emphasis on psychological, social and biological determinants of human behavioral and psychological deviance.

Prerequisite: PSYC 1.
3 units

PSYC 112. Psychology of Adolescence

Adolescent personality as the product of cultural and psychological factors, emphasizing normal behavior and development.

Prerequisite: PSYC 1.
3 units

PSYC 114. Psychology of Aging

Developmental patterns of aging (middle to old age); cognition, personality, interpersonal relationships, psychology and physiology of health, living arrangements, aging in other cultures and times, dying and death and counseling.

Prerequisite: PSYC 1.
3 units

PSYC 117. Psychological Tests and Measures

Test and questionnaire construction, evaluation and interpretation applied to intelligence and ability tests, personality and adjustment questionnaires, ratings and behavioral observation techniques.

Prerequisite: STAT 95.
3 units

PSYC 120. Advanced Research Methods and Design

Traditional laboratory experimental designs and methodology; experiments illustrating this approach.

Prerequisite: PSYC 1, STAT 95, and PSYC 100W.
Lecture 2 hours/lab 2 hours.
3 units

PSYC 121A. Advanced Research Methods Social/Personality Laboratory

Advanced treatment of research approaches used in social and personality. The focus for this course is shared between traditional laboratory and fieldwork experimental designs and methods. Data collection and statistical date analysis facilitate experiential learning.

Prerequisite: PSYC 1, STAT 95, PSYC 100W, PSYC 120, plus either: PSYC 139 or PSYC 154.
Lecture 1 hour/lab 3 hours.
ABC/No Credit
2 units

PSYC 121B. Advanced Research Methods: Cognition/Perception Laboratory

Advanced treatment of research approaches used in cognition and/or perception. The primary focus of the course is on traditional laboratory experimental designs and methods. Laboratory-based data collection and analysis facilitate experiential learning.

Prerequisite: PSYC 1, STAT 95, PSYC 100W, PSYC 120, plus any one of : PSYC 135, PSYC 155, or PSYC 158.
Lecture 1 hour/lab 3 hours.
2 units

PSYC 121C. Advanced Research Methods: Clinical Laboratory

Advanced treatment of research approaches used in clinical research. The primary focus of the course is on traditional field and laboratory research methodologies. Research laboratory data collection and analysis facilitate experiential learning.

Prerequisite: PSYC 1, STAT 95, PSYC 100W, PSYC 120, PSYC 110.
Lecture 1 hour/lab 3 hours.
2 units

PSYC 122. Computer Applications in Behavioral Research

Computer programming and utilization of computer software in the analysis of behavioral research data.

Prerequisite: STAT 95 (or equivalent).
3 units

PSYC 125. Introduction to Group Dynamics

Major theories of small-group behavior; experiential course requiring group participation.

Prerequisite: PSYC 1.
3 units

PSYC 126. Drugs, Brain and Behavior

Survey of psychoactive drugs, including prescription and street drugs; social, behavioral and physiological effects of drugs; neural mechanisms of drug action; history of drug use.

Prerequisite: PSYC 30 or 3 units of biology.
3 units

PSYC 129. Neuroscience

Principles of brain organization and function underlying behavior. Topics include neuroanatomy and physiology of language, vision, sexual behavior, memory and abnormal behavior.

Prerequisite: Either PSYC 30 and 3 units of biology, or 9 units of biology.
Not acceptable as an elective in the Biology major.
3 units

PSYC 130. Psychology and Religious Experience

See RELS 130.
3 units

PSYC 135. Cognition

The activity of knowing: acquisition, organization and use of knowledge. Processes involved in that activity, including perception, memory, thinking and language.

Prerequisite: PSYC 1.
3 units

PSYC 138. Exercise and Mental Health

The role of exercise in mental health, with special emphasis on its effectiveness as a primary or supplementary treatment for depression and anxiety; examined within an evolutionary framework, with lifestyle as a central issue.

Prerequisite: PSYC 1.
3 units

PSYC 139. Psychology of Personality

Current approaches to the study of personality and personality processes.

Prerequisite: PSYC 1.
3 units

PSYC 142. Child Psychopathology

Nature, causes and handling of emotional and personality problems of children.

Prerequisite: PSYC 1.
3 units

PSYC 145. Community Mental Health

See HS 145.
3 units

PSYC 150. Educational Psychology

Development of individuals and how they learn. Intelligence, emotions, interests, social relations as related to development and learning.

Prerequisite: PSYC 1.
No credit for those who have taken EDSC 173.
3 units

PSYC 153. Psychology in the Courtroom

Role of psychology in the legal system: legal procedure and adversary system, jury selection, jury decision-making, eyewitness testimony, mental health law, criminal responsibility and legal insanity, expert psychological testimony, role of forensic psychologists.

Prerequisite: PSYC 1.
3 units

PSYC 154. Social Psychology

Theories, problems and issues in the study of human social behavior.

Prerequisite: PSYC 1.
3 units

PSYC 155. Human Learning

Memory, forgetting, concept formation, language learning, reinforcement and related topics. Traditional learning concepts, theories and findings with reference to contemporary classroom management, behavior modification and other applications.

Prerequisite: PSYC 1.
3 units

PSYC 157. Psychology of Motivation

Empirical findings and theoretical developments in motivation in relationship to concepts of need, arousal, drive and emotion.

Prerequisite: PSYC 1.
3 units

PSYC 158. Perception

Empirical and theoretical approaches to the psychology of perception with an emphasis on vision. Topics include the perception of form, color, depth and motion as well as the effects of attention and experience.

Prerequisite: PSYC 1.
3 units

PSYC 160. Clinical Psychology

Survey of clinical psychology as profession and the role of the clinical psychologist as therapist, diagnostician, administrator, scientist and agent of individual and social change.

Prerequisite: PSYC 1.
3 units

PSYC 165. Theory and Methods of Counseling

Major theories of behavioral change, with emphasis on counseling of persons with problems in occupational, social, family and individual adjustment.

Prerequisite: PSYC 1.
3 units

PSYC 167. Sports Psychology

Psychological aspects of sports, including the value of sports, psychological factors involved in competitive as well as non-competitive athletic activities and the role of sports psychologists.

Prerequisite: PSYC 1.
3 units

PSYC 170. Industrial and Organizational Psychology

Application of psychological theory, research and methodology to the work environment. Topics covered include leadership, power, group processes, motivation, satisfaction and issues in personnel psychology.

Prerequisite: PSYC 1.
3 units

PSYC 171. Personnel Psychology

Introduction to relevant methodology, research, applications and issues in personnel psychology. Topics covered include legal issues in personnel psychology, test validation, selection, job analysis, performance appraisal and training development.

Prerequisite: PSYC 1.
3 units

PSYC 172. Psychology of Career Development and Management

Career paths from the perspective of the individual and the organization; personal career decision-making and planning; organizational opportunities, policies and practices.

Prerequisite: PSYC 1.
3 units

PSYC 173. Human Factors

Human psychology and physiological characteristics and methods for taking these into account in designs and development of human-machine systems. Current human factor engineering efforts in lab, design process and operational environment.

Prerequisite: PSYC 1.
3 units

PSYC 175. Management Psychology

Theory and practice of psychology in organizations and management. Topics include learning, motivation, perception, attitudes, personality, stress, groups, culture, careers, communication, leadership, politics, conflict, cooperation, decision-making and organizational change.

Prerequisite: PSYC 1.
3 units

PSYC 180. Individual Studies

Research project in psychology.

Prerequisite: 12 units of psychology and instructor and department chair consent.
Repeatable for credit
Credit / No Credit
1-4 units

PSYC 184. Directed Reading

Directed reading on a specific psychological topic.

Prerequisite: 12 units of psychology and instructor and department chair consent.
Repeatable for credit
Credit / No Credit
1-4 units

PSYC 186. Psychology Field Work

Supervised field work in a selected area of psychology. Course is repeatable for 4 unit maximum.

Prerequisite: Instructor and department chair consent.
Repeatable for credit
Credit / No Credit
1-4 units

PSYC 190. Current Issues Capstone

Integrative survey of current viewpoints and issues in psychology, how they developed and likely future directions of psychology.

Prerequisite: PSYC 100W and senior standing.
Pre/Corequisite: PSYC 120 or PSYC 18.
3 units

PSYC 191. The Psychology of Prejudice

Provides an examination of psychological theory and research related to prejudice and discrimination from the perspectives of both the holders and targets of prejudice. Includes individual and small group exercises to provide experiential learning.

Prerequisite: Completion of Core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: S
3 units

PSYC 193. Behavioral Science in Practice

See ANTH 193.

1 unit

PSYC 195. Honors Seminar in Psychology

Intensive examination of background and current status of student-selected problems. Course is repeatable once for credit.

Prerequisite: At least 18 units of PSYC or STAT with a GPA of at least 3.5; PSYC 120; and senior standing.
Enrollment limited to qualified students.
Repeatable for credit

3 units

PSYC 199. Senior Honors Thesis

Supervised thesis open only to exceptional senior psychology majors.

Prerequisite: Senior or graduate standing and instructor consent.
Credit/No Credit/Report in Progress
3 units

GRADUATE**PSYC 200. Seminar in Personality Theory**

A survey of contemporary approaches to personality study.

Prerequisite: PSYC 139 (or equivalent) plus a total of nine semester hours of upper division psychology courses.
3 units

PSYC 201. Projective Techniques I

Introductory survey of social-emotional assessment and its theoretical basis. Limited practicum experience in administering, scoring and interpretation.

Prerequisite: PSYC 205 (or equivalent).
MS program priority.
3 units

PSYC 202. Projective Techniques II

The clinical use of inkblot techniques, with emphasis on Rorschach administration and scoring. Practicum experience in selection, administration, scoring and limited interpretation of projective test batteries.

Prerequisite: PSYC 201 or PSYC 203B.
MS program priority.
3 units

PSYC 203A. Clinical Assessment I

An in-depth introduction to objective, projective and behavioral assessment techniques used in the clinical evaluation of the behavior and functioning of adults, children and families.

Prerequisite: PSYC 117 (or equivalent).
MS program priority.
3 units

PSYC 204. Advanced Child Psychology

An intensive examination of significant developments in child psychology with emphasis on current theories.

Prerequisite: PSYC 102 (or equivalent).
3 units

PSYC 205. Intelligence Testing

Supervised experience in the use of intellectual and cognitive assessment techniques, emphasizing individual psychoeducational assessment.

Prerequisite: PSYC 117 (or equivalent).
MS program priority.
3 units

PSYC 206. Psychology of Individual Differences

The nature and causes of individual differences, with particular emphasis upon special abilities and disabilities.

Prerequisite: PSYC 1, PSYC 117 and STAT 115 (or equivalents).
3 units

PSYC 208. Family Assessment and Intervention

An interdisciplinary exploration of how therapists can analyze and change interpersonal dynamics in couples and families.

3 units

PSYC 209. Psychology of Contemporary Families

An overview of current family issues faced by psychotherapists in clinical settings. Emphasis will be placed on identification and conceptualization of these issues from a psychological perspective, stressing integration of issues into clinical practice. MS Clinical program priority.

Prerequisite: PSYC 208.
3 units

PSYC 210. Advanced Psychopathology

Advanced course to provide knowledge and experience in the classification and treatment of disorders of childhood, adolescence and adulthood as they are identified in schools, family interactions and worksite settings. Critical review of research related to the evaluation of treatment strategies.

Prerequisite: PSYC 110.
MS program priority.
3 units

PSYC 211. Child Psychopathology

An overview on the nature, assessment and treatment of Child Psychopathology. Emphasis will be placed on understanding DSM-IV diagnoses from a developmental prospective. Objective methods of assessment and empirically supported treatments will be covered.

3 units

PSYC 212. Life Span Development

Psychological, biological and social development throughout the life cycle. Interdisciplinary lecture course includes infancy, childhood, adolescence, young adulthood, middle age and old age. Topics include theories, research, influences, changes, problems and patterns of human development.

MS program priority.
3 units

PSYC 217. Advanced Individual and Group Testing

Use of individual and group test of abilities, aptitudes, personality and achievement with normal and exceptional children. Emphasis on interpretation and reporting.

Prerequisite: PSYC 201 (or equivalent) and PSYC 205.

MS program priority.
3 units

PSYC 220. Seminar in Experimental Psychology

Applications of experimental method to current problems in psychology. Individual design and experimental work required.

Prerequisite: PSYC 120A.
3 units

PSYC 222. Gender and Ethnic Issues in Counseling and Therapy

Theoretical and practical understanding of gender and ethnic issues in clinical practice, including issues arising from differing socialization, psychological structures, values and cultural assumptions that may affect therapeutic intervention within individuals, couples and families.

MS program priority.
3 units

PSYC 223A. Clinical Psychology Theory I

Application of clinical theory to the treatment of behavioral problems of individuals and families.

Prerequisite: PSYC 203A, PSYC 210, PSYC 258 and PSYC 265 (or equivalents).

Corequisite: PSYC 224A.
MS program priority.
3 units

PSYC 223B. Clinical Psychology Theory II

Application of clinical theory to the treatment of behavioral problems of individuals and families.

Prerequisite: PSYC 223A.
Corequisite: PSYC 224B.
MS program priority.
3 units

PSYC 224A. Clinical Psychology Practicum I

Supervised experience in the treatment of behavioral and emotional problems of individuals and families.

Prerequisite: Same as PSYC 223A.
Corequisite: PSYC 223A.
MS program priority.
3 units

PSYC 224B. Clinical Psychology Practicum II

Advanced supervision in the treatment of behavioral and emotional problems of individuals and families.

Prerequisite: Same as PSYC 224A.
Corequisite: PSYC 223B.
MS program priority.
3 units

PSYC 225. Advanced Group Dynamics

Advanced study of the dynamics of small group interaction. Limited supervised training in group facilitation techniques.

Prerequisite: PSYC 125 (or equivalent).
MS program priority.
3 units

PSYC 227. Psychology and the Law

Examination of crucial topics currently at the interface of the fields of psychology and law, including psycholegal research, mental health law, legal regulation of psychological practice and forensic psychology as a professional specialty.

3 units

PSYC 228. Professional Ethics for Psychologists

Consideration of ethical and legal issues related to the professional application of psychology. Designed particularly for students involved in field work.

MS program priority.
3 units

PSYC 230. Seminar in Physiological Psychology

An advanced consideration of the neurophysiological correlates of behavior.

Prerequisite: PSYC 129 (or equivalent).
3 units

PSYC 232. Clinical Psychopharmacology

Prepares counseling professionals to understand aspects of drug use, mechanisms of change and clinical outcomes.

Prerequisite: PSYC 126 or equivalent.
3 units

PSYC 235. Seminar in Cognitive Psychology

Theories and current research in cognitive psychology with emphasis on components of cognitive processing from pattern recognition to problem solving. Substantial emphasis on cognitive development and mechanisms of cognitive change.

Prerequisite: Graduate standing.
3 units

PSYC 236. Psychology of Language

The course will provide a comprehensive survey of the psychology of language from an information processing perspective. Topics will include the processes involved in the perception, comprehension and production of written and spoken material. The course will also address sociolinguistic issues.

3 units

PSYC 237. Human Sexuality

Dimensions of human sexual behavior for counselors. Personal attitudes and the communication process. Biomedical, legal, sociocultural and psychological aspects.

MS program priority.
3 units

PSYC 240. Research Design and Applied Psychometrics

Advanced introduction to issues in psychological research (experimental, quasi-experimental and survey research), measurement and test construction (item analysis, test reliability and validity and development of norms).

Prerequisite: PSYC 117, STAT 115 or instructor consent.
3 units

PSYC 243. Field Work in Psychology

Supervised field work experience in outside agency settings. Open through consultation only to students in MS programs.

Repeatable for credit
Credit / No Credit
1-6 units

PSYC 249. Field Work in Industrial/ Organizational Psychology

Supervised experience applying psychological and organizational theory and practice in business, industrial and other organizational settings.

Prerequisite: Instructor consent.
Repeatable for credit
Credit / No Credit
1-6 units

PSYC 250. Advanced Educational Psychology

Contemporary issues and programs in educational psychology. Emphasis on research regarding instructional programs for classes, small groups and individuals, and application of outcome and process evaluation strategies.

Prerequisite: PSYC 150 (or equivalent) and six additional hours in psychology.
3 units

PSYC 254. Social Psychology Seminar

Theoretical and practical approaches to the understanding of human behavior within a social context.

Prerequisite: PSYC 154 (or equivalent).
3 units

PSYC 255. Seminar in Learning

Current problems in learning with primary emphasis on learning theory.

Prerequisite: PSYC 155 (or equivalent).
3 units

PSYC 256. Seminar in Perception

Selected issues in visual sensation and perception. Topics include the perception of color, form, depth and motion. Emphasis on the relationship of perception to sensory physiology.

Prerequisite: PSYC 158 (or equivalent).
3 units

PSYC 257. Seminar in Motivation

Current problems and research in motivation with emphasis on the relevance of these to theories of motivation.

Prerequisite: PSYC 157.
3 units

PSYC 258. Methods of Psychotherapy

Survey of the theoretical background and practical application of various approaches to psychotherapy.

Prerequisite: PSYC 139.
MS program priority.
3 units

PSYC 265. Counseling Procedures and Techniques

For school and agency workers with emphasis on interviewing and counseling techniques for work with individuals and groups.

Prerequisite: PSYC 165.
MS program priority.
3 units

PSYC 266. Mediation and Conflict Resolution

This is a practicum course in mediation techniques for divorcing couples who are having difficulty arriving at satisfactory child custody arrangements. Training will be part didactic and part practical involving 1-3 sessions per client couple. Course is repeatable for credit not in same semester.

Prerequisite: PSYC 258 and PSYC 265.
Repeatable for credit
Credit / No Credit
3 units

PSYC 270. Seminar in Industrial and Organizational Psychology

Psychological theory, research and practice in organizations. Topics emphasized include motivation, job satisfaction, communication, leadership, group processes, decision-making, conflict, cooperation, power and organization development and change.

Prerequisite: Instructor consent.
MS I/O program priority.
3 units

PSYC 271. Seminar in Personnel Psychology

In-depth introduction to relevant methodology, research, applications and issues. Topics include legal issues in personnel, test validation, selection, job analysis, performance appraisal and training and development.

Prerequisite: Instructor consent.
MS I/O program priority.
3 units

PSYC 272. Training and Development in Organizations

Course will address 'classic', current, and future issues in training and development. Topics covered include theories of learning, needs assessment, training methodology, program evaluation, management development, and trends that may influence future training and development programs.

Prerequisite: Instructor consent.
3 units

PSYC 273. Seminar in Human Factors

Data and theory of sensory and cognitive psychology and their application to the design of systems used by humans.

Prerequisite: PSYC 135 and PSYC 158 (or equivalent).
3 units

PSYC 276. Groups at Work

Group process and performance, types of work groups and tasks, group development (norms, roles and strategies), group leadership approaches and skills, decision-making, team building, high performing and self managing teams.

Prerequisite: Instructor consent.
3 units

PSYC 280. General Seminar

Current psychological literature in selected fields and the development of a specific topic by the student.

Prerequisite: Undergraduate major in psychology (or equivalent).
3 units

PSYC 281A. Advanced General Psychology

Consideration of several significant areas in psychology such as: perception, learning, systems, emotional behavior and motivation.

Prerequisite: Undergraduate major in psychology (or equivalent).
Repeatable for credit
3 units

PSYC 281B. Advanced General Psychology

Consideration of several significant areas in psychology such as: perception, learning, systems, emotional behavior and motivation. A not a prerequisite for B.

Prerequisite: Undergraduate major in psychology (or equivalent).
Repeatable for credit
3 units

PSYC 291. Method and Design for Applied Research

Development and management of applied research programs based on contributions of psychological research and methodology. Criticizing existing and proposed research. Reporting and communicating research results.

Prerequisite: PSYC 18 or PSYC 120A; STAT 95 and STAT 115.
MS program priority.
3 units

PSYC 292. Theory and Practice of Consultation

Application of the consultation process to improvement of performance of consultees in family, educational and clinical settings. Emphasis on competency-based training in a collaborative model through practicum and field experience.

3 units

PSYC 293. Organizational Development

Theory and practice of organization development, including systems thinking; action research; organization assessment and diagnosis; survey development and feedback; individual, group, inter-group and organization-wide interventions; consultant roles; and ethics of practice in organizations.

Prerequisite: Instructor consent.
3 units

PSYC 295. Substance Abuse, Human Sexuality, and Life-Span Issues for Therapists

An examination of current issues in marriage and family therapy related to substance use, sexual issues, and development across the lifespan. Course will cover theories and contemporary issues in these areas with an emphasis on application in treatment.

3 units

PSYC 298. Special Problems

Advanced work in areas not covered in any regular course offering. Course is repeatable for a maximum of four units.

Prerequisite: Instructor consent.
Repeatable for credit
Credit / No Credit
1-4 units

PSYC 299. Master's Thesis or Project

Five units required for the M.A.; six units for the M.S.

Prerequisite: Admission to candidacy for the MA or MS degree and thesis chair permission.
Repeatable for credit
Credit/No Credit/Report in Progress
1-6 units

STATISTICS**UPPER DIVISION****STAT 115. Intermediate Statistics**

Statistical analysis at the intermediate level; chi-square, analysis of variance, correlation and regression, and topics in experimental design; use of microcomputers for statistical calculations.

Prerequisite: STAT 95 (or equivalent).

Intended for majors in education, nursing, personnel administration, psychology, social service and sociology, and psychology minors.
3 units

STAT 125. Analysis of Variance

Applications to a variety of experimental designs. Use in hypothesis testing and estimation of magnitude of effects; use of microcomputers for statistical calculations.

Prerequisite: STAT 115.

3 units

GRADUATE**STAT 235. Multivariate Analysis**

Multivariate techniques for analyzing social science data with emphasis on multiple regression, multivariate analysis of variance, factor analysis, discriminant analysis and canonical correlation.

Prerequisite: STAT 115 or instructor consent.
3 units

STAT 245. Advanced Statistics

Advanced problems in statistical analysis. Advanced consideration of hypothesis testing, estimation and analysis of variance.

Prerequisite: STAT 115 or instructor consent.
3 units

Religious Studies (Comparative)

College of Humanities and the Arts

Clark Hall 419
408-924-4463
408-924-4576 (Fax)

Professors

Mira Z. Amiras
Christian Jochim
Richard E. Keady, Coordinator
Jennifer Rycenga

Assistant Professors

Chanh Cong Phan
Shantanu Phukan

Curricula

- BA, Religious Studies
- Minor, Religious Studies

Most modern nations, including the U.S., guarantee freedom of religious belief and practice as a human birthright. However, the knowledge and understanding of religions that leads citizens to embrace religious pluralism and tolerance, which we call religious literacy, must be learned. Members of the Comparative Religious Studies Program's faculty are committed to guiding students in the kinds of learning needed for this task. In other words, it is our goal to provide students with the key elements of religious literacy: knowledge of the basic data in the study of religions, respect and tolerance for diverse religious perspectives, and critical thinking skills that can be applied to explanations of religion from insiders (believers, participants, etc.) as well as outsiders (anthropologists, historians, etc.). In a word, the motto of the program is: "Celebrate Religious Diversity, Promote Religious Literacy."

The program presents scholarly interpretations of the world's religious traditions. It aims to be as global as possible in covering the great diversity of religions and as inclusive as possible in covering the various methodological approaches to the study of religion. Our second motto is that we address "Ultimate Issues in a Global Perspective."

The Religious Studies degree offers comprehensive preparation for those who plan to undertake graduate education in theology, history of religions and other related areas. The major also provides preparation for graduate education in law, business and the helping professions as well as in any area of the social sciences or humanities where in-depth knowledge of religion will be a distinct advantage in one's career.

The religious studies minor offers a basic understanding of religious beliefs and practices for those whose careers would benefit significantly from a familiarity with some religious traditions, such as those in teaching, journalism, business, social work, medicine and law. The minor incorporates the study of religious traditions with reflection on what religion is and how we understand it.

The strengths of the program are found, above all, in the diverse backgrounds and interests of its faculty. They have lived and studied in various world areas, including North Africa, the Near East, Europe, India, Taiwan and Vietnam. Naturally, they are conversant with the languages of the areas in which they have lived. They have also published books and articles covering these and other areas where the world's religions are practiced. Moreover, faculty are active in a wide range of scholarly organizations, including the American Academy of Religion, the Association for Asian Studies, the Middle Eastern Studies Association, the Society for the Anthropology of Consciousness, the American Anthropological Association and the Society for Asian and Comparative Philosophy. Finally, they excel in teaching, as indicated by awards some have received from SJSU's Institute for Teaching and Learning.

The major-minor advisor works closely with students to make curricular choices that reflect their particular interests and academic preparation. Because the program is small and flexible, we can give each student personal attention.

All courses taken at California public institutions (community colleges and CSU or UC campuses) and evaluated as equivalent to SJSU courses are transferable to the undergraduate major and minor programs in religious studies. On a case by case basis, the program coordinator will consider all other requests to apply to the minor or major in religious studies relevant courses taken elsewhere and transferred to SJSU.

BA – Religious 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	39
Core	15
RELS 070A, RELS 070B, RELS 101, RELS 131 and RELS 195	
Supporting Courses	24
Eight courses chosen from the first three categories, with no more than three courses from any one category; or eight courses chosen from all four categories, with no more than two courses from each category.	
<i>Traditions:</i> RELS 142, RELS 143, RELS 144, RELS 145, RELS 151, RELS 153, RELS 155, RELS 156, RELS 157	
<i>Thought, Texts and Images:</i> RELS 090, RELS 104, RELS 108, RELS 109, RELS 112, RELS 124, RELS 134, RELS 161, RELS 164, RELS 186A, RELS 186B, RELS 194, ENGL 116	
<i>Religions and Cultures:</i> RELS 099, RELS 114, RELS 119, RELS 121, RELS 122, RELS 123, RELS 130, RELS 148, RELS 162, RELS 191, AFAM 134, AFAM 137, HIST 115, HIST 116, HIST 117, HIST 121A, HIST 121B, HIST 122, HIST 154	
<i>Languages of Religion:</i> an appropriate foreign language approved by the religious studies advisor (e.g. Hebrew, Greek, Japanese, Chinese, Latin)	
Electives	28
Total Units Required	120

In lieu of the 24-unit options described above, a student may contract at the beginning of the junior year with the major advisor for a 24-unit package reflecting a specific interest within the discipline. This contract becomes the official major contract.

Minor – Religious Studies

	Semester Units
RELS 101, plus 12 additional units of which 6 must be upper division and 9 in RELS courses.	6
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

Courses**RELIGIOUS STUDIES****LOWER DIVISION****RELS 010A. Elementary Hebrew**

See HEBR 010A.

3 units

RELS 010B. Elementary Hebrew

See HEBR 010B.

3 units

RELS 015A. Intermediate Hebrew

See HEBR 015A.

3 units

RELS 015B. Intermediate Hebrew

See HEBR 015B.

3 units

RELS 070A. Western Religions

Primitive beginnings to present expressions such as Egyptian, Greek, Roman, Jewish, Christian and Islamic. Structure and dynamics manifest in sacred texts, institutions, rituals, central figures and movements. Emphasis on living religions and their traditional roots.

GE: C2

3 units

RELS 070B. Eastern Religions

Hindu, Buddhist, Confucian, Taoist and other Asian traditions from ancient beginnings to present expressions. Structure and dynamics manifest in sacred texts, institutions, rituals, central figures and movements. Emphasis on living religions and their traditional roots.

GE: C2

3 units

RELS 090. Bible History and Literature

The Bible in context of its history, literary sources and as a reflection of Jewish and Christian traditions. Motifs and themes in light of their original audience, historic usage and contemporary development.

GE: C2

3 units

RELS 099. Death, Dying and Religions

Is death the end or the beginning? Learn how people integrate the physical, emotional, psychological, and spiritual dimensions of living and dying. Examine religious teachings and practices for making death personally meaningful, socially significant, or even politically powerful.

GE: E

3 units

UPPER DIVISION**RELS 100W. Writing in the Humanities**

See HUM 100W.

ABC/No Credit

GE: Z

3 units

RELS 101. Introduction to the Study of Religion

Introduction to the approaches of various disciplines (sociology, psychology, theology, philosophy, textual criticism, etc.) to the study of religion. Experience in using these approaches to understand religious theory, practices and organizations.

Prerequisite: Upper division standing.

3 units

RELS 102A. Advanced Hebrew

See HEBR 102A.

3 units

RELS 102B. Advanced Hebrew

See HEBR 102B.

3 units

RELS 104. Asian Philosophy

See PHIL 104.

GE: V

3 units

RELS 105A. Classical and Koine Greek

See GRK 105A.

3 units

RELS 105B. Classical and Koine Greek

See GRK 105B.

3 units

RELS 108. Jewish Mysticism, Magic and Folklore

Jewish sacred texts from the Talmudic Period (200 BCE - 500 CE) to the development and elaboration of Kaballah. Theological and legal development of Midrash, Mishna and Gemara. Primary sources in translation and the Talmudic method. Jewish mysticism and symbols of the Zohar.

Prerequisite: Upper divisions standing or instructor consent.

3 units

RELS 109. Philosophy of Religion

See PHIL 109.

3 units

RELS 112. Topics in the Bible

Specific areas of the Bible explored in depth according to announced topics: e.g. Psalms, Prophets, Gospels, Letters of Paul. Course is repeatable for credit for different topic.

Prerequisite: Upper division standing or instructor consent.

Repeatable for credit

3 units

RELS 114. Legacy of Asia

See HUM 114.

GE: V

3 units

RELS 119. History of Christianity to the Reformation

See HIST 119.

3 units

RELS 121. Music and Religious Experience

The relationship between music and religion, including sacred music, chant traditions, and/or religious themes in popular music. The use of music in ritual, trance, and mystical experience.

Prerequisite: Upper division standing.

3 units

RELS 122. Magic, Science and Religion

Exploring the ways in which people have attempted to gain mastery over the natural and supernatural worlds beginning with prehistoric times and concluding with modern day society and the contemporary world.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing.

For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: V

3 units

RELS 123. Body, Mind and Spirit

Approaches to body, mind and spirit in world religions and cultures. Physical evolution of the body, cultural evolution and products of the human mind and evolutionary transcendence of spirit. Explorations of the interface of these three models of experience.

Prerequisite: Upper division standing or instructor consent.

3 units

RELS 124. Literature and Religious Experience

How authors and poets represent spiritual ideals and human dilemmas in a variety of literary genres such as the epic, the novel, the essay, love poetry and the haiku; and writers such as Plato, Emerson, Emily Dickinson, Thomas Merton, Shakespeare, Basho, Hanshan, Rumi and Sufi poets, Kabir, Indian Virashaiva poets, and authors of The Book of Odes and The Mahabharata. Course is repeatable as readings and themes change.

Prerequisite: Upper division standing or instructor consent.

Repeatable for credit

3 units

RELS 130. Psychology and Religious Experience

Interdisciplinary approaches to religious experiences (such as confession, conversion, mystical ecstasy, and possession). Discussion of writings and empirical research on consciousness; dream, trance, meditative states; religious healing, and so forth. Comparing religious interpretations to psychological and scientific explanations of religious phenomena.

Prerequisite: Upper division standing and one prior course in Psychology or Religious Studies, or instructor consent.

3 units

RELS 131. Gender, Sexuality, and Religion

Women's roles and gendered categories within diverse religions. Feminist critiques, reforms, and creations of religious institutions. The political and feminist dimensions of women's religious experience. Understanding the roles of sexuality in religion.

Prerequisite: Upper division standing or instructor consent.

3 units

RELS 134. Religion Film & Media

Depictions of religion, religions, religious behavior, and religious propaganda in film and media. Exploring these from several perspectives, (e.g. ethnic and etic, cross-national, aesthetic) and examining the murky problem of "the truth" in the depiction of religious and spiritual experience.

Prerequisite: Upper division standing or instructor consent.
3 units

RELS 142. Contemporary Buddhism and its Roots

Teachings of Gautama, the Buddha and ways in which those teachings were modified in forms of Buddhism that followed: Theravada in southeast Asia and Mahayana in east Asia.

Prerequisite: Upper division standing or instructor consent.
3 units

RELS 143. Spiritual Traditions of India

History, scriptures, practices, and contemporary movements of the Hindu, Jain, Sikh, and Islamic traditions of India. From Vedic gods and goddesses to Sufi masters. From Guru Nanak to Mahatma Gandhi. Religious art, music, meditation, pilgrimage, and philosophy.

Prerequisite: Upper division standing or instructor consent.
3 units

RELS 144. Chinese Traditions

Religious thought and practice of China's three Great Traditions (Buddhism, Taoism and Confucianism) as well as China's Little Tradition (Chinese folk religion). The role of these traditions within traditional Chinese culture and their relevance to the modern world, including China.

Prerequisite: Upper division standing or instructor consent.
3 units

RELS 145. Middle Eastern Traditions

Introduction to the various religions of the Middle East through exploration of the cooperation, competition, conflict and dialogues between the religious communities of contemporary Middle Eastern countries.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: V
3 units

RELS 148. Religion and Anthropology

See ANTH 148.

3 units

RELS 151. Catholic and Protestant Traditions

Christian religious history from Jesus to the present day, development of Roman Catholic traditions, Protestant traditions and especially living thought and practice in Christianity today.

Prerequisite: Upper division standing or instructor consent.
3 units

RELS 152. Visual Culture and Jewish Identity

See ARTH 152.

Repeatable for credit
3 units

RELS 153. Jews, Zionism, and the State

Tradition, law, ceremony, people and expressions of Judaism from the Old Testament period to the present.

Prerequisite: Upper division standing or instructor consent.
3 units

RELS 155. Pagan Traditions

Thematic and historical examination of localized religious traditions; e.g., Shamanic, Animistic, Polytheistic, Pantheistic. These traditions will be studied through their arts, music, myths, life patterns, cosmologies and contact between indigenous and universalizing religions.

Prerequisite: Upper division standing or instructor consent.
3 units

RELS 156. Islam, Politics and the West

An in-depth look at the roots of Islamic tradition, law, politics, culture, and society. Emphasis on Islam's growing global prominence; relations with the West; stereotypes and misconception, as well as the nature of the Islamic state.

Prerequisite: Upper division standing or instructor consent.
3 units

RELS 157. Islamic Cultures

Exploring how diverse Islamic communities have addressed and debated issues of love, sexuality, power, grief and spiritual growth through visual art, music and poetry. Special focus on Sufi devotional music, love, poetry, and architecture.

Prerequisite: Upper division standing or instructor consent.
3 units

RELS 161. Varieties of Spiritual Experience

Comparative analysis of mystical experience, emphasizing the writings and creative works of the mystics themselves. Perspectives include comparative religions, theology, psychology, anthropology, philosophy, music and literature. Focus on ultimate transformation of self and the world.

Prerequisite: Upper division standing or instructor consent.
3 units

RELS 162. Religion and Political Controversy in the US

Contemporary problems (e.g., ecology, abortion, war, gender, sexuality and race) as interpreted by a diverse range of American ethno-religious groups.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: S
3 units

RELS 164. New Challenges in Nature and Religion

Traditional and contemporary religious views of the environment; especially the relationships among 1. the divine, sacred or spirit, 2. humans, and 3. nature; science and religion; environmental ethics; ecofeminism; deep ecology; process philosophy.

Prerequisite: Upper division standing or instructor consent.
3 units

RELS 180. Individual Studies

A project.

Prerequisite: Religious studies upper division major or minor and coordinator consent.

Repeatable for credit
Credit / No Credit
1-4 units

RELS 184. Directed Reading

Prerequisite: Religious studies upper division major or minor and coordinator consent.

Repeatable for credit
Credit / No Credit
1-4 units

RELS 186A. Medieval Art from Fourth to Eleventh Centuries

See ARTH 186A.

3 units

RELS 186B. Medieval Art from Eleventh to Fifteenth Centuries

See ARTH 186B.

3 units

RELS 191. Religion in America

History of social and intellectual influence of religious groups, stressing their African-, Asian-, European-, Latin- and Native-American roots. Highlights contact between groups, immigration, religious diversity and syncretism.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: S
3 units

RELS 194. Critical Issues/Authors in Comparative Religion

A central theme or figure influential in religious thought. Course is repeatable for credit for different theme or figure.

Prerequisite: Upper division standing or instructor consent.

Repeatable for credit
3 units

RELS 195. Senior Seminar in Religious Studies

Interrelationships of various disciplines within religious studies examined to provide an integrating experience of the discipline. Course is repeatable once for credit when focus changes.

Prerequisite: 6 upper division units in religious studies and senior standing.

Repeatable for credit
3 units

Science Education

College of Science

Professors

John O. Matson
Ellen P. Metzger
Maureen A. Scharberg, Director
Dan B. Walker

Associate Professors

Elizabeth M. McGee, Graduate Advisor
Paula Messina
Julio G. Soto

Assistant Professors

Resa Kelly

Curricula

- BA, Biological Sciences, Preparation for Teaching
- BA, Chemistry, Preparation for Teaching
- BA, Earth Science
- BA, Natural Science, Preparation for Teaching
- BA, Physics, Preparation for Teaching
- MA, Natural Science

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 have been designed to qualify for the science credential. 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 – Natural 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 – Natural Science, Preparation for Teaching

See Biological Sciences Department listing (see index).

BA – Physics, Preparation for Teaching

See Physics Department listing (see index)

MA – Natural Science

The MA – Natural Science is directed at secondary school 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 special areas of interest within the field of science education.

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 equivalent, or demonstrated competence in a field of science appropriate to the candidate's graduate objectives, with a grade point average of 2.75, and the approval of the graduate advisor and/or graduate committee.

Evidence of appropriate goal(s) and commitment to advanced study in natural science 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.

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 satisfactory completion of prerequisites. Prerequisites may not be used for credit towards the master's degree.

Requirements for Admission to Candidacy

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 Studies and Research website at www.sjsu.edu/gradstudies.

Plan A (with Thesis)

Requires a thesis in science education issues approved by the master's committee of no less 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)

Requires a project related to science education approved by the master's committee (credited under SCI 298 units). At the end of the program, the candidate must submit a written report of the project to the master's advisor and/or graduate committee in natural science.

Plan C (with Creative Project)

Requires a science education-related creative project approved by the master's committee of no less than three members. The creative project is credited under SCI 299 units. At the end of the program, the candidate must successfully deliver an oral seminar and defense of the creative project. A written report of the creative project must be submitted to the Associate Vice President for Graduate Studies and Research.

	Semester Units
SCI 220	3
Two graduate research seminars.....	3-5
Approved 200 level courses (Plans A and C require SCI 299; Plan B requires SCI 298).....	7-9
SCI 108 or equivalent, plus approved 100- or 200-level science courses (or education courses, maximum 9 units).....	15
Total Units Required	30

Courses

SCIENCE

LOWER DIVISION

SCI 001. Science Ed Program

Cooperative learning activity to accompany selected College of Science courses and sections.

Corequisite: Enrollment in course and section accompanying workshop. No graduation credit.

Activity 4 hours.

Repeatable for credit

Credit / No Credit

1-2 units

SCI 002. Success in Science

Emphasis on development of study skills, time management, and personal growth needed to transition from high school to university. Orientation to SJSU policies and procedures; and degree and career options in science. Guest lecturers, peer advisors, and community building.

Lecture 2 hour/activity 2 hours.

GE: E

GE: E

3 units

SCI 003. Workshop Facilitator Training

Practical collaborative education theory and techniques for academic excellence workshop facilitators.

Prerequisite: Current appointment as AEW Facilitator.

No graduation credit.

Repeatable for credit

No Degree Credit

1 unit

SCI 090T. Success as Transfer Students

Emphasis on development of study skills, time management, and personal growth needed to transition from community college to university. Orientation to SJSU policies and procedures; and degree and career options. Guest lecturers, peer advisors, and community building.

Lecture 1 hour/activity 2 hours/recitation 1 hour.

3 units

UPPER DIVISION

SCI 104. Physical Science Teacher Enhancement

A thematic approach to the study of relevant topics and concepts in physical science. Development of inquiry-based, hands-on classroom activities in physical science.

Prerequisite: Teacher credential and/or instructor consent.

Repeatable for credit

Credit / No Credit

1-3 units

SCI 105. Integrated Science Teacher Enhancement

A thematic approach to the study of relevant topics and concepts in integrated science. Development of inquiry-based, hands-on classroom activities in integrated science.

Prerequisite: Teacher credential and/or instructor consent.

Repeatable for credit

Credit / No Credit

1-3 units

SCI 110. Global Themes of Science

The themes of energy, evolution, and systems & interactions will be used to examine conceptual connections between biological, earth and physical sciences. Emphasis will be given to strategies best suited to teach these unifying global themes of science.

Prerequisite: BIOL 21, CHEM 35, and GEOL 103.

ABC/No Credit

3 units

SCI 157. Community Action/Community Service

See EDUC 157.

Repeatable for credit

GE: S

3 units

SCI 180. Individual Studies

Work, under guidance, in special fields.

Prerequisite: Instructor consent.

Repeatable for credit

Credit / No Credit

1-4 units

SCI 184. Directed Reading

Assigned readings of selected books, journals and special papers chosen to fill gaps in training or to introduce new fields. Evaluation through weekly reports and conferences.

Prerequisite: Instructor consent.

Repeatable for credit

Credit / No Credit

1-4 units

SCI 189. Multimedia Production Seminar

See TECH 189.

3 units

SCI 199. Senior Project Seminar

Capstone seminar dealing with investigation and analysis applied to the senior project and other data sets from topical issues in science.

Prerequisite: BIOL 155 and BIOL 100W; advanced standing in the BA Biological/Physical Science teaching major.

Corequisite: SCI 180.

Offered only occasionally.

Repeatable for credit

1 unit

GRADUATE

SCI 201. Nature of Science

Individualized studies for all science candidates to improve their scholarship ability in selected science areas. Standards and practices in the synthesis, analysis and research of scientific topics at master's level.

Lecture/seminar 3 hours.

3 units

SCI 205. Methods of Research

Introduction to techniques and procedures of scientific research. Each student required to prepare and defend a working outline of a master's thesis or project in his or her area of concentration.

Lecture/seminar 3 hours.

Introductory course in statistics or equivalent recommended.

3 units

SCI 208. Science, Technology and Society

A study of scientific enterprise and its interactions with technology and with the political, economic, educational, religious, philosophical and social aspects of society.

Lecture/seminar 3 hours.

3 units

SCI 210. Integrative Science in the Outdoor Classroom

Inquiry-based instructional methods and practices for teaching integrative science beyond the traditional classroom.

Repeatable for credit
3 units

SCI 220. Theories and Practices in Science Education

Analysis of current trends in science curriculum and instruction. Orientation for the philosophy and scope of the program. Emphasis on development of a theory of instruction and curriculum in science with implications for practice.

Lecture/seminar 3 hours.
Teaching experience preferred. Must be taken during first year in program.
3 units

SCI 255. Advanced Natural Science

Selected topics in natural science or science education.

Repeatable for credit
1-3 units

SCI 281T. Individual Studies in Biotechnology

Supervised, advanced work in specialized fields relevant to biotechnology.

Prerequisite: Admission to the Master of Biotechnology program; instructor consent and Program Director.
Repeatable for credit
1-4 units

SCI 283T. Topics in Biotech Regulatory Affairs

Introduction to laws regulating the pharmaceutical, biotechnology, medical device industries. Discussions of company organization; product development and commercialization; Good Manufacturing Practice.

Prerequisite: Admission to the Master of Biotechnology program and consent of the Program director.
Repeatable for credit
3 units

SCI 285. Seminar

Provides a format for the presentation and discussion of original work by faculty, guest investigators and graduate students.

2 units

SCI 298. Research

Independent investigations of an advanced nature for students with adequate preparation, to be carried out under direct supervision of a staff member or committee. Seminar presentation may be required.

Repeatable for credit
Credit / No Credit
1-3 units

SCI 299. Master's Thesis

Seminar presentation may be required.

Prerequisite: Admission to candidacy for the master's degree and selection of a thesis committee.
Repeatable for credit
Credit/No Credit/Report in Progress
1-3 units

SCIENCE EDUCATION**UPPER DIVISION****SCED 173. Secondary School Science**

Theory and practice, instructional techniques, and materials for science in the secondary schools.

Pre/Corequisite: EDSC 172A, EDSC 173, EDSC 184X and secondary science education advisor approval.
Repeatable for credit
3 units

SCED 175. Classroom Experiences in Science Teaching

Investigations of teaching career choices based on classroom experiences. Fulfills pre-professional experience requirement for K-12 science teaching. Repeatable for credit with instructor consent.

Prerequisite: Upper division standing.
Repeatable for credit
Credit / No Credit
1 unit

SCED 184I. Student Teaching for Science Individualized Interns

Supervised student teaching in science class(es) in the public school where the student is employed as an Individualized Intern. Repeatable for a total of 12 units.

Prerequisite: Admission to Single Subject Credential Program; science advisor and Single Subject Coordinator consent.
Repeatable for credit
Credit / No Credit
2-4 units

SCED 184Y. Student Teaching II – Classroom Teaching

Minimum 80-120 class hours of classroom, lab or field teaching in appropriate single subject, grades K-12 and related teaching activities/seminar.

Prerequisite: SCED 173 (Science Credential Candidates must complete SCED 173 with a grade of "B" or better, "B-" not accepted) and joint approval of the Science Education Program and the Secondary Education Department.

Repeatable for credit
Credit / No Credit
4 units

SCED 184Z. Student Teaching III – Classroom Teaching

Minimum 80-120 class hours of classroom, lab or field teaching in appropriate single subject, grades K-12 and related teaching activities/seminar.

Prerequisite: SCED 173 (Science Credential Candidates must complete SCED 173 with a grade of "B" or better, "B-" not accepted) and joint approval of the Science Education Program and the Secondary Education Department.

May be in different subject/school and will be at a different grade level.
Repeatable for credit
Credit / No Credit
4 units

GRADUATE**SCED 204. Earth Systems Science for Teachers**

See GEOL 204.

Repeatable for credit
3 units

SCED 375. Colloquium in Science Education

Resources and innovations for science curriculum development and instruction. An interface with people and facilities which can enhance Bay Area science instruction.

Corequisite: SCED 184Y or SCED 184Z.
Also open to experienced teachers.
Credit / No Credit
2 units

Social Sciences

College of Social Sciences

Dudley Moorhead Hall 239A
408-924-5740

Professors

Maria Luisa Alaniz
Hien Duc Do, Coordinator, Asian American Studies
Alexander Yamato, Chair

Associate Professors

Shahin Gerami, Coordinator, Women's Studies
Henry J. Gutierrez

Assistant Professors

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

The Social Sciences Department is an interdisciplinary department offering 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 coursework 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

The Women's Studies Program offers a comprehensive program which provides students with a multidisciplinary body of knowledge, both theoretical and factual, about women. The curriculum emphasizes the diversity as well as the commonalities among women.

A Women's Studies minor provides students with information about women's experience, history and changing roles, thus offering a useful background for most professions and an important complement to any major.

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 Requirements42

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 Education2**Requirements in the Major45-48****Lower Division15**

Complete five of: ANTH 011; ECON 001A or ECON 001B; GEOG 010; HIST 010A or HIST 010B; POLS 002; PSYC 001; SOCI 001

Upper Division30-33**Core Social Science Courses15**

SOCS 193, SOCS 194, SOCS 195, AAS 185 and WOMS 160

Topical Emphasis15-18

Select one of the following emphases.

Asian American Studies15

Select one of two options.

Option 115

AAS 175 (3); Complete four courses from: AAS 125, AAS 144, AAS 160, AAS 186, AAS 187, AAS 191, AAS 192, RELS 147 (12)

Option 215

AAS 175 (3); Complete four courses from: AAS 125, AAS 144, AAS 160, AAS 186, AAS 187, AAS 191, AAS 192, RELS 147 (9); Complete three units from: ANTH 177, CHIN 102, GEOG 160, HIST 107, HIST 109A, HIST 109B, HIST 110A, HIST 110B, HIST 134, HUM 114, JPN 102, PHIL 104, POLS 145, RELS 143, RELS 144 (3)

Comparative Studies in Race/**Ethnicity, Class & Gender15**

SOCS 177 (3); Complete three units from: AAS 125, AAS 144, AAS 160, AAS 186, AAS 187, AAS 191, AAS 192 (3); Complete three units from: WOMS 101, WOMS 112, WOMS 144, WOMS 155 (3); Complete six units from: AFAM 110, AFAM 115, AFAM 134, AFAM 143, AFAM 152, MAS 120, MAS 127, MAS 130, MAS 160, MAS 175, SOCS 177 (6)

Public Service and Societal Change15

SOCS 190 (3); Complete six units from: SOCS 177, AAS 175, WOMS 101, WOMS 112, WOMS 160 (6); Complete six units from: ECON 132, ENVS 107, HIST 187, POLS 103, SOCI 161, SOCI 163

Women's Studies18

Complete nine units from: WOMS 101, WOMS 190, WOMS 192 (9); Complete nine units from: WOMS 112, WOMS 114, WOMS 144, WOMS 150, WOMS 155, WOMS 157, WOMS 169, WOMS 180, WOMS 187, AAS 160, AFAM 125, AFAM 152, AFAM 156, MAS 160 (9)

Electives28-31

Total Units Required120

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 Requirements39-48

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 Education2**Requirements in the Major42****Lower Division12**

HIST 001A and HIST 001B (6); select one sequence of U.S. History and Government courses from the following: HIST 15A and HIST 15B; AFAM 2A and AFAM 2B; MAS 10A and MAS 10B, or AAS 33A and AAS 33B (6)

Upper Division30

SOCS 195 (6); SOCS 177, SOCS 195, GEOG 101 and HIST 189B (12); HIST 155 and two upper division U.S. History courses (9); ECON 109, GEOG 123 and MAS 185 (9)

Electives28-37

Total Units Required120

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

SOCS 137, SOCS 138, SOCS 139, SOCI 162, SOCS 177, SOCS 195, POLS 102, GEOG 112, ANTH 115 and ECON 109

Support Requirements for Diversified Major 57-66**Language & Literature** 18-21

ENGL 001A, ENGL 001B and ENGL 112A (9); ENGL 103 or LLD 107 (3); LLD 108, COMM 045 and EDEL 108E (9) 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 10-19

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
AAS 125, AAS 160, AAS 186, AAS 187, AAS 191 or AAS 192	
Electives	3
Three or more units in Asian American studies or a related area.	
Total Units Required	15

Minor – Social Science

Semester Units

Required Courses	6
SOCS 195 (3); SOCS 177, SOCS 193 or SOCS 194 (3)	
Elective Courses	12
Four 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	9
WOMS 101 (3); WOMS 192 (3); One course focused on women of color (3)	
Electives	6
WOMS 010, WOMS 020, WOMS 107, WOMS 112, WOMS 114, WOMS 120, WOMS 121, WOMS 122, WOMS 131, WOMS 144, WOMS 150, WOMS 155, WOMS 156, WOMS 157, WOMS 160, WOMS 169, WOMS 175, WOMS 180, WOMS 182, WOMS 187, WOMS 190 or WOMS 193 (3); Any course listed on women's studies course handout (interested students should pick up women's studies minor handout and women's studies course list from the department) (3)	
Total Units Required	15

Total Units Required 15

Courses**ASIAN AMERICAN STUDIES****LOWER DIVISION****AAS 020. Women of Color in the US**

See WOMS 020.

GE: D2

3 units

AAS 022. Asian America: Diversity in the United States

This course offers an introduction to the Asian American experiences from an interdisciplinary perspective. Examines the factors that define minority groups and their positions in the United States, emphasizing the fact that while there are common experiences, many racial minorities have distinct experiences.

3 units

AAS 025. The Changing Majority: Power and Ethnicity in America

See MAS 025.

GE: D2

3 units

AAS 033A. Asian Americans in the United States Historical and Political Process

Historical and political factors which shaped the culture, institutions and society of America. The role of workers, immigrants and people of color, with Asian Americans as a particular focus.

Note: Entire sequence satisfies GE Areas D2,3; F1,2,3.

GE: M6

3 units

AAS 033B. Asian Americans in the United States Historical and Political Process

Historical and political factors which shaped the culture, institutions and society of America. The role of workers, immigrants and people of color, with Asian Americans as a particular focus.

Note: Entire sequence satisfies GE Areas D2,3; F1,2,3.

GE: M7

3 units

UPPER DIVISION**AAS 125. Filipino Experience in the United States**

Filipinos in the United States beginning with immigration and culminating with analysis of past and contemporary issues facing Filipino Americans.

3 units

AAS 133. Introduction to Social Planning

See URBP 133.

3 units

AAS 136. WWII Press Coverage: Holocaust Concentration Camps and Japanese Internment Camps

See MCOM 136.

3 units

AAS 144. Vietnamese Women in America

See WOMS 144.

3 units

AAS 145. Urban Policy and Its Impact on Inner City Residents

See URBP 145.

3 units

AAS 160. Asian American Women

Sociological and historical study of the role and condition of Asian women in America, with focus on the history of their arrival in America, difficulties of adjustment, etc.

Offered only occasionally.

3 units

AAS 170. Special Topics in Asian American Studies

Focus varies each semester and is announced in the schedule of classes. Repeatable for credit with program coordinator approval.

Repeatable for credit

3 units

AAS 175. Asian American Communities

Asian American demography, institutions and contemporary issues.

Prerequisite: Completion of Core GE, Satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: S

3 units

AAS 180. Individual Studies

Individual study and research.

Repeatable for credit

Credit / No Credit

1-4 units

AAS 182. Ethnicity and Aging

Exploration of aging in American cultures. Multiple aspects of aging and the biological, social, cultural and psychological factors that bear upon ethnic elders.

Offered only occasionally.

3 units

AAS 185. Multicultural Perspectives within American Society

Examination of historical and sociocultural perspectives of American ethnic minorities. Theoretical and methodological approaches to the study of American ethnic minorities.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: S

3 units

AAS 186. The Vietnamese Experience in America

The experience of Vietnamese refugees from their exodus after the end of the Vietnam War in 1975 to their resettlement in America, emphasizing processes by which a new immigrant group is incorporated into the society.

Prerequisite: Upper division standing.

3 units

AAS 187. Multiracial Asian Americans Experience

The lives and families of Multiracial Asian Americans are explored through their social histories, identity, and experiences in the development and evolution of Asian American ethnic communities.

Prerequisite: Upper division standing.

3 units

AAS 190. Internship

On-site experience with an Asian American community organization. Regular class meetings scheduled to discuss knowledge, skills and ideas related to the internship experience. Repeatable for credit with program coordinator approval.

Prerequisite: AAS 33B or instructor consent.

Repeatable for credit

Credit / No Credit

1-4 units

AAS 191. History of Chinese Americans

Chinese Americans in historical perspective from Chinese immigration to contemporary social conditions.

3 units

AAS 192. History of Japanese Americans

The Japanese in America from approximately 1800. Includes relocation, wartime conditions, post-war history and contemporary situations.

3 units

AAS 193. Women and Minorities in the Social Sciences

See SOCS 193.

3 units

AAS 194. Peoples of Color in the Making of the Americas: 1400 – 1850

Analysis of the impact that people of color have had on the formation of New World culture and society, from 1400-1850.

Prerequisite: Upper division standing.

3 units

AAS 195. Peoples of Color in the Making of the Americas: 1850 – Present

Analysis of the impact that people of color have had on the formation of New World culture and society from 1850 to the present.

Prerequisite: Upper division standing.

3 units

GRADUATE

AAS 275. Asian American Communities

Examination of the social and historical contexts of the development of Asian American communities and the impact of major social institutions, such as educational, political, economic and cultural, upon these communities.

3 units

CULTURAL PLURALISM

SOCIAL SCIENCE

LOWER DIVISION

SOCS 015. Statistical Applications in the Social Sciences

See SOCI 015.

GE: B4

3 units

UPPER DIVISION

SOCS 100W. Writing Workshop

Practice in improvement of writing skills appropriate to the broad field of social science. Includes essays, reports and scholarly communication.

Prerequisite: ENGL 1B (with a grade of C or better); Completion of core GE, satisfaction of Writing Skills Test and upper division standing.

ABC/No Credit

GE: Z

3 units

SOCS 137. California in Historical and Social Scientific Perspectives

This interdisciplinary course examines the evolution of the state of California through the perspectives of historians, geographers, economists, political scientists, and other social scientists.

Not acceptable for Economics majors, except double majors; acceptable for Economics minors.

3 units

SOCS 138. United States in Historical and Social Science Perspectives

Examines the development of the US to 1900 through the combined lenses of History and the Social Science disciplines of Geography, Political Science, Economics, Sociology, and Anthropology.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: S

3 units

SOCS 139. The World in Historical and Social Science Perspectives

This interdisciplinary course investigates world civilizations from the dawn of mankind until 1750.

Prerequisite: HIST 15A and HIST 15B or AAS 33A and AAS 33B. Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

Repeatable for credit

GE: V

3 units

SOCS 177. Society and Education

The relations between social, political and economic institutions of society and education, including the effect of the relations on personal and social values and behavior.

3 units

SOCS 180. Individual Studies

Individual work on special topics by arrangement.

Prerequisite: Major or minor in the department.

Repeatable for credit

Credit / No Credit

1-4 units

SOCS 185. Teaching in a Diverse Society

This course will provide future teachers with an understanding of the ways in which diversity in the classroom influences the learning process and how specific teaching strategies can enhance student learning.

Prerequisite: SOCS 18 or MAS 18.

3 units

SOCS 187. Multiracial Asian Americans Experience

See AAS 187.

3 units

SOCS 190. Internship

On-site experience with schools and other institutions. Repeatable for credit with program coordinator approval.

Prerequisite: Instructor consent.
Repeatable for credit
Credit / No Credit
1-4 units

SOCS 193. Women and Minorities in the Social Sciences

Seminar on contributions made by women and minorities in the social sciences.

Prerequisite: WOMS 10, WOMS 20, WOMS 101 or instructor consent.
3 units

SOCS 194. Intellectual Foundations of the Social Sciences

Seminar on the classic contributions in the various academic disciplines that make up the social sciences.

3 units

SOCS 195. Theory and Practice in the Social Sciences

A synthesis stressing interdisciplinary approaches to the extent that each discipline is seen as unique in its application to the examination of humankind. Required for majors.

3 units

SOCS 199. Senior Thesis

The preparation and writing of an original project.

Prerequisite: Departmental approval.
Repeatable for credit
Credit / No Credit
3 units

GRADUATE**SOCS 295A. Social Science Graduate Seminar**

An intensive study of the social sciences, their synthesis and interdisciplinary approach. To include an examination of each discipline's methodology and research procedures.

Prerequisite: Graduate standing.
Repeatable for credit
3 units

SOCS 295B. Social Science Graduate Seminar

Exposure to research design and research protocols. The kinds of analyses that can be applied to different kinds of research designs.

3 units

SOCS 297. Social Science Theory

An overview of some of the more important developments in the history of social theory. Course will cover classical, contemporary and post-modern theorists. Will focus on the significance, influence and the role of social theories in the development of society.

3 units

SOCS 298. Special Study

Advanced individual research and projects.

Prerequisite: Consent of instructor and approval by the social science graduate coordinator.
By arrangement only.
Repeatable for credit
Credit / No Credit
1-4 units

SOCS 299. Master's Thesis

Prerequisite: Admission to candidacy for the master's degree.
1-4 units; on demand. Special Studies and Thesis shall not exceed a total of 6 units.
Repeatable for credit
Credit/No Credit/Report in Progress
2-4 units

WOMS 020. Women of Color in the US

Constructs knowledge of the historical and contemporary experience of women of color. Focuses on Native American, African American, Latina, and Asian American women and considers contributions they have made to the shaping of the nation.

GE: D2
3 units

UPPER DIVISION**WOMS 101. The Study of Women**

Multidisciplinary introduction to traditional and new images, roles, experiences, ethnic similarities and differences, and contemporary problems of American women.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.
GE: S
3 units

WOMS 102. The Global Study of Women

This course will be a survey of literature on the interaction of gender and forces of globalism.

Prerequisite: Upper division standing.
3 units

WOMS 107. Psychology of Women

See PSYC 107.

3 units

WOMS 112. Women in the Global Economy

Women's participation in the economy, US and internationally: paid employment, consumption, subsistence labor, reproduction, volunteerism. It connects daily life activities with international economic trends, with particular attention to race, class, implications for families and strategies for equity.

Prerequisite: WOMS 10, WOMS 20, WOMS 101 or instructor consent.
3 units

WOMS 114. Politics of Mothering and Reproduction

Explore contemporary definitions and values inscribed in issues pertaining to mothers and reproduction. It will be built upon three literatures: discourses of law and legality, discourses of nature and science, and discourses based in feminist thinking.

Prerequisite: WOMS 10, WOMS 20, WOMS 101 or instructor consent.
3 units

WOMS 120. Special Topics in Women's Studies

Focus announced in the schedule of classes. Repeatable for credit with program coordinator approval.

Prerequisite: WOMS 10, WOMS 20, WOMS 101 or instructor consent.
Repeatable for credit
3 units

WOMS 121. Philosophy and Feminism

See PHIL 121.

3 units

WOMS 122. Women in the Second Half of Life

See GERO 122.

3 units

WOMS 131. Gender, Sexuality, and Religion

See RELS 131.

3 units

SOCIAL SCIENCE EDUCATION**UPPER DIVISION****SSED 184I. Student Teaching for Social Science Individualized Interns**

Supervised student teaching in social science class(es) in the public school where the student is employed as an Individualized Intern. Repeatable for a total of 12 units.

Prerequisite: Admission to Single Subject Credential Program; social science advisor and Single Subject Coordinator consent.
Repeatable for credit
Credit / No Credit
2-4 units

SSED 184Y. Student Teaching II – Classroom Teaching

Minimum 80-120 class periods of classroom, teaching lab or field teaching in appropriate single subjects, grades K-12 and related teaching activities/seminar.

Prerequisite: SSED 378 with a passing grade of "B" or better (B- not acceptable) and joint approval of major and Education departments.
Repeatable for credit
Credit / No Credit
4-6 units

SSED 184Z. Student Teaching III – Classroom Teaching

May be in different subject/school and will be at a different grade level.

See SSED 184Y.

Repeatable for credit
Credit / No Credit
4-6 units

SSED 185. Teaching in a Diverse Society

This course will provide future teachers with an understanding of the ways in which diversity in the classroom influences the learning process and how specific teaching strategies can enhance student learning.

Prerequisite: SOCS 18 or MAS 18.
3 units

SSED 378. Social Science Methods

For prospective secondary teachers who plan to teach in the social science field. A prerequisite to student teaching.

3 units

WOMEN'S STUDIES**LOWER DIVISION****WOMS 010. Perspectives on Sex and Gender Roles**

Discussion of research on contemporary and traditional sex roles, male and female stereotypes, ethnic differences, sexual discrimination and human rights.

GE: D1
3 units

WOMS 144. Vietnamese Women in America

The transitions of Vietnamese American women: the history and culture of Vietnam, the war, the exodus, survival in American society, changes and conflicts for individuals and within families, higher education, the feminist movement.

Prerequisite: WOMS 10, WOMS 20, WOMS 101 or instructor consent.

3 units

WOMS 150. Women and Popular Culture

The course will use feminist and cultural studies theory to discuss the historical development and contemporary representations of women in popular culture. It will specifically examine meanings, implications and the impact of commodification and mass production of images of women.

Prerequisite: WOMS 10, WOMS 20, WOMS 101 or instructor consent.

3 units

WOMS 155. Contemporary Women's Movement

Development of the women's movement in the U.S. in relation to the changing political and social climate. Forms of activism in different ethnic groups. Analysis of issues, ideologies, strategies and accomplishments. International comparisons.

Prerequisite: WOMS 10, WOMS 20, WOMS 101 or instructor consent.

3 units

WOMS 156. Black Women Writers: Race, Culture and Life Cycle in Cross-Cultural Perspective

See AFAM 156.

3 units

WOMS 157. Feminist Oral History and Personal Memoir

Course is designed to train students in oral history and personal memoir. Emphasizing the specialness of women's voices, and of race, class and sexuality, women's silence, erasure, censorship and marginalization will be addressed.

Prerequisite: Junior standing or instructor consent.

Repeatable for credit

3 units

WOMS 158. Gender and Consumer Culture

See HIST 158.

3 units

WOMS 159. Gender and Medicine

See HIST 159.

3 units

WOMS 160. Women, Race and Class

Interdisciplinary analysis of race and class diversity among women and social, political and economic hierarchies of race, class and gender in the U.S. Topics may include sexuality, rape and racism; immigrant experiences; welfare system.

Prerequisite: WOMS 10, WOMS 20, WOMS 101 or instructor consent.

3 units

WOMS 169. Feminist Perspectives on Women's Sexualities

Examines the most recent research and theory on women's sexualities with emphasis on alternative sexual communities (lesbian, bisexual, and transgendered) and how they have been affected by social forces: censorship, politics, religion, homophobia, stereotyping, and feminism.

Prerequisite: WOMS 10, WOMS 20, WOMS 101 or instructor consent.

3 units

WOMS 175. Sociology of Masculinity and Femininity

See SOCI 175.

3 units

WOMS 180. Individual Studies

Individual work on special topics by arrangement.

Prerequisite: Minor or emphasis in women's studies.

Repeatable for credit

Credit / No Credit

1-4 units

WOMS 182. Women in Literature

See ENGL 182.

Repeatable for credit

3 units

WOMS 187. Feminist Perspectives on Gender and Education in the U.S.

The role of gender in the educational system in the United States from both a historical and contemporary context. We will focus on the significance of schools as the primary socializing institution for boys and girls.

Prerequisite: Junior standing or instructor consent.

Repeatable for credit

3 units

WOMS 190. Internship

On-site experience with community or campus organization or other agency involved with women's issues. Individual and group advising augments the experiential learning. Repeatable for credit with program coordinator approval.

Prerequisite: WOMS 101 or instructor consent.

Repeatable for credit

Credit / No Credit

1-4 units

WOMS 192. Gender and Sexuality in Islamic Perspective

Discusses historical and contemporary debates within feminist theories. Organized topically and chronologically, it engages a multiplicity of texts and voices and explores the dialectical relationship between feminist theories and practices.

Prerequisite: Upper division standing.

Required for topical major and minor in Women's Studies.

3 units

WOMS 193. Women and Minorities in the Social Sciences

See SOCS 193.

3 units

GRADUATE**WOMS 201A. Seminar in Feminism**

Research, readings and discussion of subjects from the field of feminist thought. Particular attention will be paid to theories of the development of woman's present position and schema for social change. May be repeated once for credit with instructor consent.

Prerequisite: Classified standing, an undergraduate course concerned with feminism and instructor consent.

Repeatable for credit

3 units

WOMS 201B. Seminar in Feminism

Research, readings and discussion of subjects from the field of feminist thought. Particular attention will be paid to theories of the development of woman's present position and schema for social change. May be repeated once for credit with instructor consent.

Prerequisite: Classified standing, an undergraduate course concerned with feminism and instructor consent.

Repeatable for credit

3 units

WOMS 212. Seminar on Women in the Community

Integration and application of theoretical and empirical knowledge of feminism to a realistic field experience. Students will be placed with women's social, economic and political organizations.

3 units

WOMS 220. Seminar in Women's Studies Topics

Advanced study of selected issues in women's studies. Topics will vary and will be announced in the schedule of classes.

Prerequisite: Instructor consent.

3 units

WOMS 238. Feminist Methodology

This interdisciplinary course asks whether unique methods characterize feminist research in social sciences and examines the epistemology and methodology of feminist social science scholarship. Particular attention given to race, class and sexuality.

Prerequisite: Graduate standing or instructor consent.

3 units

Social Work

College of Applied Sciences and Arts

Washington Square Hall 215
408-924-5800

Professors

Alice Hines, Director
Migdalia Reyes

Associate Professors

Sadhna Diwan
Laurie Drabble
E. Michael Gorman
Yoko Ishigaki Karjala
Peter A. Lee

Assistant Professors

Emily J. Bruce
Edward Cohen
Amy D'Andrade
Meekyung Han
Sang Lee
Kathy Lemon Osterling
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

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 coursework 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 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 6

BIOL 021 and STAT 095

Requirements for the Major 38

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

Electives 29

Total Units Required 120

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 12

SCWK 010, SCWK 110, SCWK 120 and SCWK 130

Electives 6

Complete two courses from: SCWK 121, SCWK 131, SCWK 140, SCWK 170, SCWK 190, SCWK 192, SCWK 195, SCWK 197

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 coursework 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 Admissions 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 Studies and Research website at www.sjsu.edu/gradstudies.

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

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 program.

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 15
SCWK 222, SCWK 223, SCWK 232 and SCWK 298 (12); SCWK 250, SCWK 260, SCWK 270 or SCWK 280 (3)

Spring Semester 13
Those applying for the Title IV-E Stipend Program must complete the Children, Youth and Families field of practice. Those applying for PPSC must complete the School Social Work field of practice.

Aging: SCWK 251, SCWK 233 and SCWK 298 (10); one SCWK elective (3)

Children, Youth, and Families: SCWK 263, SCWK 233 and SCWK 298 (10); SCWK 261 or SCWK 262 (3)

School Social Work: SCWK 233, SCWK 263, SCWK 271 and SCWK 298 (13)

Health/Mental Health: SCWK 281, SCWK 233 and SCWK 298 (10); one SCWK elective (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 coursework 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 enroll 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.

Courses

SOCIAL WORK

LOWER DIVISION

SCWK 010. Introduction to Social Welfare and Social Work

Social welfare institutions and the social work profession: its development, knowledge base, value system and specific areas of direct practice.

3 units

UPPER DIVISION

SCWK 100W. Writing Workshop

This course focuses on developing and enhancing writing and presentation skills vital to the social work profession in the following areas: research, grant writing, clinical documentation, and administration.

Prerequisites: ENGL 1B (with a grade of C or better); completion of core GE, satisfaction of Writing Skills Test and upper division standing.

ABC/No Credit

GE: Z

3 units

SCWK 107. Aging and Society

See GERO 107.

GE: S

3 units

SCWK 110. Foundations of Social Work Practice

Introduction to the history, mission, values, skills and knowledge base of generalist social work practice within a transcultural perspective. Focus on social work practice with emphasis on those populations-at-risk who are disenfranchised and marginalized.

Pre/Corequisite: SCWK 140.

3 units

SCWK 111. Generalist Social Work Practice I

Knowledge, values and skills for generalist social work practice utilizing problem-solving methods with systems of all sizes. Focus on developing professional relationships, defining issues, communication skills, collecting data and assessing individuals from diverse backgrounds interacting with their environments.

Prerequisite: SCWK 110, SCWK 120, SCWK 130, SCWK 140.

Corequisite: SCWK 141.

3 units

SCWK 112. Generalist Social Work Practice II

Knowledge, values and skills for generalist social work practice with emphasis on families, groups, organizations and communities. Focus on transactions to optimize social well-being and empowerment of individuals, families and communities utilizing strengths and transcultural perspectives.

Prerequisite: SCWK 111 (with a grade of "C" or better).

Corequisite: SCWK 142.

3 units

SCWK 120. Social Welfare Institutions and Policies I

Development of social work as a profession, including mission, values, ethics. Development and changes in the philosophy, legislative base and structures for social services as these affect social and economic justice and impact health and well-being.

Prerequisite: Junior standing.

3 units

SCWK 121. Social Welfare Institutions and Policies II

Methodology and framework for analyzing social policy and understanding institutional discrimination, particularly related to populations-at-risk and other disenfranchised groups. Political and organizational processes to influence policy development.

Prerequisite: SCWK 120.

3 units

SCWK 130. Human Behavior in the Social Environment I

Theories and knowledge of bio-psycho-social development from birth to old age. The dynamics of interacting social systems and culture on human development. Theories and research on risk and resilience. Human diversity and populations-at-risk emphasized.

Prerequisite: Junior standing.

3 units

SCWK 131. Human Behavior in the Social Environment II

Theories and knowledge about families, groups, organizations, and communities from a systems perspective. The impact of discrimination, economic deprivation and oppression on populations-at-risk. Emphasis on the promotion of optimal health and well-being.

Prerequisite: Upper division standing. Recommend completion of SCWK 130.

3 units

SCWK 140. Introduction to Field Practicum

Direct involvement with community services to provide the student with exposure to clients/client systems prior to Field Practicum I. Six to eight hours weekly in community-based agencies and on-campus seminars.

Prerequisite: SCWK 110 or consent of advisor.

Credit / No Credit

3 units

SCWK 141. Field Practicum I

Generalist social work practice with individuals, families and communities from a transcultural perspective in an agency under supervision. Sixteen hours per week required in placement.

Prerequisite: SCWK 110, SCWK 120, SCWK 130 and SCWK 140.

Corequisite: SCWK 111.

Credit / No Credit

4 units

SCWK 142. Field Practicum II

Generalist social work practice in an agency setting continued. Emphasis on individuals, small groups and communities from a transcultural perspective. Sixteen hours per week required in placement.

Prerequisite: SCWK 111, SCWK 141.

Corequisite: SCWK 112.

Credit / No Credit

4 units

SCWK 165. Community Field Practicum

Assignment to various community projects, programs or agencies with emphasis on children and youth to focus on group development and empowerment. Data collection, problem identification and community analysis to identify resources for problem resolution.

Prerequisite: Upper division standing.

Credit / No Credit

1-6 units

SCWK 170. Introduction to Research Methods

Scientific and analytic approaches to building knowledge for social work practice, including ethical issues in social research. Evaluation of service delivery systems using qualitative and quantitative research methodologies.

Prerequisite: SCWK 110, SCWK 120, SCWK 130.

Pre/Corequisite: STAT 95.

3 units

SCWK 175. Social Work Senior Seminar

An integrative capstone seminar reviewing current trends, problems and issues confronting the profession. Developments and challenges in California and the country for BA level generalist practitioners evaluated in light of the student's own personal and professional goals.

Pre/Corequisite: SCWK 175 is open to Social Work majors only; must be taken concurrently with SCWK 112 and SCWK 142; or taken in the semester immediately following completion of SCWK 142, and all other Social Work courses must have been completed.

3 units

SCWK 180. Individual Studies

Individual work on special topics by arrangement.

Prerequisite: Department major.

Repeatable for credit

Credit / No Credit

1-4 units

SCWK 190. Social Welfare: A World View

A basic understanding of how societies address social risks and meet human need. The values and concepts of social welfare are examined. Global perspectives of social development and social welfare systems in other countries are surveyed and compared.

Prerequisite: ENGL 100W or equivalent.

3 units

SCWK 192. Social Work with Families

Exploration of various family forms, cultural factors and dynamics influencing family interaction with agencies and community. Practice strategies include assessment, defining strengths and focusing on interventions to promote health and well-being.

Prerequisite: SCWK 110, SCWK 120 or SCWK 130 (or equivalent).

3 units

SCWK 195. Social Services for Children and Youth

Policies, programs and methods utilized in providing services to children and their families. Child and youth behavior analyzed in relation to interaction with family, peers, schools, community and other institutions. Impact of service structures on individuals from diverse backgrounds considered.

Prerequisite: SCWK 110, SCWK 120 or SCWK 130 (or equivalent).

3 units

SCWK 197. Alcoholism, Substance Abuse and the Family

An overview of alcohol and substance use and abuse. Effects on client systems, particularly families and children. Identification of symptoms and addictive behaviors, strengths and limitations of interventions, with a special focus on oppressed and marginalized populations.

Prerequisite: SCWK 110, SCWK 120 or SCWK 130 (or equivalent).

3 units

GRADUATE**SCWK 202. Social Policy and Services: History and Values**

History of social welfare and work with emphasis on diverse populations, particularly Latinos/as, African Americans and Asian Americans. Social policy and social work values in relation to practice issues and social services.

3 units

SCWK 204. Social Policy Analysis

Frameworks for analyzing social policies using principles of social and economic justice. The role of policy in helping or deterring people in attaining well-being. Focus on diverse populations and populations-at-risk.

Prerequisite: SCWK 202.

3 units

SCWK 212. Human Behavior in the Social Environment I

Systems theory and the ecological model presented with transcultural perspectives from infancy through the end of adult life cycle. Emphasizes behavior of individuals and families, especially Latinos/as, African Americans, Asian Americans and other diverse and oppressed populations.

3 units

SCWK 214. Human Behavior in the Social Environment II

Systems theory and the ecological model presented with transcultural perspectives. Emphasizes behavior in groups, communities and organizations with a focus on Latinos/as, African Americans, Asian Americans and other diverse and oppressed populations.

Prerequisite: SCWK 212.

3 units

SCWK 220. Transcultural Generalist Practice I

Transcultural generalist practice with client systems, particularly individuals and families, at micro, mezzo and macro levels. Assessment, planning and implementing interventions within a professional relationship, utilizing a strengths perspective, focusing on Latinos/as, African Americans and Asian Americans.

Corequisite: SCWK 230.

3 units

SCWK 221. Transcultural Generalist Practice II

Transcultural generalist practice with client systems, particularly groups, organizations and communities to enhance well-being. Approaches and skills to ameliorate conditions affecting people adversely, particularly those of diverse backgrounds and populations-at-risk. Emphasis on promoting social and economic justice.

Prerequisite: SCWK 220 and SCWK 230.

3 units

SCWK 222. Transcultural Advanced Generalist Practice I: Family Systems Focus

Transcultural advanced generalist practice with an emphasis on family systems, diverse cultural patterns and varying family forms. Assessment of multi-system interactions with communities and organizations, focusing on enhancing the health and well-being of marginalized populations and populations-at-risk.

Prerequisite: SCWK 221.

Corequisite: SCWK 232.

3 units

SCWK 223. Transcultural Advanced Generalist Practice II: Community Systems Focus

Methods of community intervention at multiple levels focused on empowerment and developing the strengths of diverse groups, particularly Latino/a, African American, Asian American and other oppressed and marginalized populations. Includes community social work, assessment and interventions.

Prerequisite: SCWK 221.

3 units

SCWK 224. Advanced Generalist Practice With Spanish Speaking Populations

Analysis of culturally relevant services to linguistic minority Spanish-speaking population from a transcultural generalist perspective. Skills to include Spanish language interventions appropriate for cultural access, appropriate assessment, individual, family and group interventions and advocacy for client systems at all levels.

Prerequisite: SCWK 221.

3 units

SCWK 230. Social Work Practicum I

Development of transcultural practice skills with families, groups and individuals in their social contexts. Emphasis on developing professional roles and relationships, applying multi-system assessment and interventions, particularly with Latino/a, African American and Asian American clients/client systems.

Corequisite: SCWK 220.

Credit / No Credit

4 units

SCWK 231. Social Work Practicum II

Development of skills to differentially assess the strengths and capacities of interacting individuals, families, groups, organizations and communities. Application, termination and evaluation of problem-solving interventions from a transcultural generalist practice perspective.

Prerequisite: SCWK 230.

Corequisite: SCWK 221.

Credit / No Credit

4 units

SCWK 232. Social Work Practicum III

Development of advanced generalist practice skills with individuals, families, groups, organizations and communities from a transcultural perspective emphasizing family, community and policy practice. Development of skill to use self effectively with diverse clients, colleagues and community members from various backgrounds.

Prerequisite: SCWK 231.

Corequisite: SCWK 222.

Repeatable for credit

Credit / No Credit

2-5 units

SCWK 233. Social Work Practicum IV

Development of advanced generalist practice skills with the aged, children and youth, health/mental health or educational settings. Developing culturally competent skills to assess, plan, implement and evaluate interventions from transcultural and strengths perspectives to address family and community well-being.

Prerequisite: SCWK 232.

Credit / No Credit

2-5 units

SCWK 240. Research Methods and Design

Scientific method and problems of knowledge. Basic concepts and models of research methodology, qualitative research, program and practice evaluation in social work. Critical analysis of existing research on ethnic minorities and other populations-at-risk.

3 units

SCWK 242. Research Methods, Data Analysis and Evaluation

Basic concepts and models for research methodology applied to the analysis of data in social work. Emphasis on quantitative analysis using microcomputers.

Prerequisite: SCWK 240.

3 units

SCWK 245. Management in Human Services

The organization and continuous operation of services delivery systems including the functions of management, decision-making, communication, authority, delegation, planning and staffing.

Notes: An elective.

3 units

SCWK 246. Supervision and Consultation

Focus on the knowledge and skill base of the social worker in supervision and consultation. Identification and analysis of the functions of the social worker as supervisor and consultant.

Notes: An elective.

3 units

SCWK 250. Policy Practice in Aging

Critical analysis of the impact of policies on the elderly and their families, particularly those who are Latino/a, African American and Asian American. Assessment of organizations and policy implementation. Development of strategies to promote well-being and social change.

Prerequisite: SCWK 204.

3 units

SCWK 251. Social Work with Aging Populations

Knowledge and skill development for transcultural advanced generalist practice in aging settings. Emphasis on Latino/a, African American, Asian American aging clients/client systems. Conceptual frameworks for practice at micro, mezzo and macro levels.

Notes: An elective.

3 units

SCWK 260. Policy Practice in Child and Family Welfare

Critical analysis of the impact of social policies on children and families, particularly those who are Latino/a, African American and Asian American. Assessment of organizational structures and policy implementation. Development of strategies to promote well-being and social change.

Prerequisite: SCWK 204.

3 units

SCWK 261. Social Work Practice with Children

Skills and knowledge in working with high-risk children and families from an advanced generalist perspective. Focus on understanding of child and family development as well as assessment and intervention at various levels in a transcultural context.

Notes: An elective.

3 units

SCWK 262. Social Work Practice with Adolescents

Skills and knowledge in working with diverse populations of high-risk adolescents from an advanced generalist perspective. Focus on understanding adolescent and family development as well as assessments and interventions at various levels in a transcultural context.

Notes: An elective.

3 units

SCWK 263. Social Work and the Law

Analytical skills to understand the legal system, its functions, organization, jurisdiction and case processing methods. An examination of the legal environment of social work practice in selected settings: domestic violence, child abuse and neglect, sexual abuse and education.

Notes: An elective.

3 units

SCWK 270. Policy Practice in Schools

Critical analysis of the impact of educational policies on students and parents, particularly those who are Latino/a, African American and Asian American. Assessment of policy implementation and schools as organizations. Development of strategies to promote well-being and social change.

Prerequisite: SCWK 204.

3 units

SCWK 271. Social Work in Educational Settings

Knowledge and skill development for advanced generalist practice in school settings. Roles and functions of social workers in education. Emphasis on schools as community service agencies to meet the needs of culturally diverse student populations and families.

3 units

SCWK 280. Policy Practice in Health/Mental Health

Critical analysis of the impact of health/mental health policies on populations-at-risk, particularly those who are Latino/a, African American and Asian American. Assessment of organizations and policy implementation. Development of strategies to promote well-being and social change.

Prerequisite: SCWK 204.

3 units

SCWK 281. Social Work in Health/Mental Health

Knowledge and skill development for advanced generalist practice in health/mental health settings. Emphasis on Latino/a, African American and Asian American clients/client systems interacting with service delivery systems. Conceptual frameworks for practice at micro, mezzo and macro levels. Social Work program elective.

3 units

SCWK 283. Psychopharmacology for Social Workers

Historical trends and specific cultural, ethnic, gender and age related issues of alcohol and drug use are presented. Psychotherapeutic drugs and the pharmacologic basis of medicines for psychiatric disorders and culturally competent treatment interventions for substance abuse will be discussed. Social Work program elective.

3 units

SCWK 285. Social Work and Social Problems

Examination of selected social problems related to the direct practice of social work that focus on in-depth knowledge of the problems and of the required direct practice skills and techniques.

Notes: An elective.

3 units

SCWK 287. Advanced Generalist Practice in Substance Abuse

An examination of clinical, policy, and practice issues regarding abuse and dependence of alcohol and other drugs. Analysis and utilization of micro, mezzo and macro considerations related to prevention, harm reduction, drug policies, and current intervention models and treatment approaches.

Notes: An elective.

1-3 units

SCWK 298. Special Study

Planning and implementation of research practical emphasizing culturally appropriate measures and design strategies. Students produce a professionally written project demonstrating and understanding of the knowledge base underlying appropriate social work interventions.

Prerequisite: SCWK 242.

Repeatable for credit

Credit / No Credit

1-4 units

SCWK 299. Master's Thesis or Project

Prerequisite: Admission to candidacy for the master's degree; approval of the college's research committee. Repeatable for a total of 4 units.

Repeatable for credit

Credit/No Credit/Report in Progress

1-4 units

Sociology

College of Social Sciences

Dudley Moorhead Hall 241
408-924-5320

Professors

David G. Asquith
Yoko Baba, Chair
Wendy Ng

Associate Professors

Peter Chua
Christopher Hebert
Susan Bell Murray
Scott Myers-Lipton
Robert Thamm

Assistant Professors

Kerryn Elizabeth Bell
Natalie Boero
Carlos Garcia
James Daniel Lee
Amy Leisenring
Preston O. Rudy
Claudio Vera Sanchez

Curricula

- BA, Sociology
- BA, Sociology,
Concentration in Criminology
- BA, Sociology,
Concentration in Family
- BA, Sociology,
Concentration in Community Change
- BA, Behavioral Science,
Double Major in Sociology
- Minor, Sociology
- MA, Sociology
- MA, Sociology,
Concentration in Criminology

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 or with a Concentration in Criminology. 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 Criminology, Family, 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.

Internships

Sociology students serve as interns in the community, criminal justice system, business, education, and government. These required internships offer extremely valuable career experience and contacts, and also give students the chance to make a difference in the larger society.

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 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/Sociology 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/Sociology double major are listed in the Behavioral Science Program listing. Students interested in further information about the double 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	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	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 or other approved introduction to statistics or elementary statistics course SOCI 181 or EDUC 157 3	
Additional Requirements	15
SOCI 140, SOCI 153, SOCI 160, SOCI 161, SOCI 162, SOCI 163, SOCI 164, SOCI 165 or SOCI 169 (3); SOCI 107, SOCI 151, SOCI 170, SOCI 171, SOCI 172, SOCI 173, SOCI 174, SOCI 175, SOCI 176 or SOCI 178 (3) 6 Select any three upper division Sociology courses (may include SOCI 199H). One course may be in lower division if SOCI 102 is taken as a requirement for the major. 9	
Electives	34
A minor is strongly recommended.	
Total Units Required	120

Double major or double concentration requirements: contact the Sociology Department for an appointment with the department chair.

**BA – Sociology,
Concentration in Criminology**

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 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, SOCI 102 or other approved introduction to statistics or elementary statistics course (3); SOCI 181 or EDUC 157 (3)	
Criminology Concentration	15
SOCI 153 (3); Complete three courses from: SOCI 151, SOCI 152, SOCI 154, SOCI 155, SOCI 156, SOCI 158 (9); SOCI 160, SOCI 161, SOCI 162, SOCI 163, SOCI 165, SOCI 169, SOCI 170, SOCI 172, SOCI 173, SOCI 174, SOCI 175 or SOCI 199H (3)	
Electives	37
A minor is strongly recommended.	
Total Units Required	120

SOCI 120, SOCI 180, SOCI 181, 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 – Sociology,
Concentration in Family**

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	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 or other approved Introduction to Statistics or Elementary Statistics course (3); SOCI 181 or EDUC 157 (3)	
Family Concentration	15
SOCI 170 (3); Complete four courses from: SOCI 151, SOCI 162, SOCI 171, SOCI 172, SOCI 173, SOCI 174, SOCI 175, SOCI 176, SOCI 178, SOCI 199H (12)	
Electives	34
A minor is strongly recommended.	
Total Units Required	120

SOCI 120, SOCI 180, SOCI 181, 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 – Sociology,
Concentration in Community Change**

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 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 (or other approved Introduction to Statistics or Elementary Statistics course) (3); SOCI 181 or EDUC 157 (3)	
Community Change Concentration	15
SOCI 057, SOCI 163 and SOCI 164 (9); Complete two courses from: SOCI 120, SOCI 146, SOCI 151, SOCI 160, SOCI 161, SOCI 162, SOCI 165, SOCI 169, SOCI 175, SOCI 199H (6)	
Electives	37
A minor is strongly recommended.	

Total Units Required 120

SOCI 120, SOCI 180, SOCI 181, 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,
Double Major in Sociology**

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
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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 coursework 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

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 Studies and Research website at www.sjsu.edu/gradstudies.

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 taken at San José State University. Plan B students are required to complete SOCI 298, which is a special study project.

Semester Units

Core Courses	12
SOCI 200A, SOCI 201A, SOCI 200B and SOCI 201B		
Electives	12-15
200-level Sociology electives, and up to 6 units of approved 100-level courses in Sociology or 200-level courses in another department		
Thesis or Project	3-6
<i>In all plans, students may have only 12 units of C/NC courses.</i>		
Plan A (Thesis)	3-6
<i>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.</i>		
SOCI 299		
Plan B (Special Study, No Thesis)	3
SOCI 298		
Plan C (Creative Project)	3-6
SOCI 299		
Total Units Required	30

MA – Sociology, Concentration in Criminology

All requirements are the same as in the basic program and the plans (above), except that the following course requirements must be completed: SOCI 253, and two courses chosen from SOCI 254, SOCI 256, and SOCI 258. Plan B students must also complete additional examinations from two graduate-level criminology courses taught by two different SJSU instructors.

Courses**SOCIOLOGY****LOWER DIVISION****SOCI 001. Introduction to Sociology**

How does society affect individual behavior and how does individual behavior affect society? Influence of social institutions and arrangements (family, school, workplace, politics, etc.) on roles, groups, values. Basic sociological theories and methods. Careers, specializations. Required for majors, minors.

CAN SOC 2
GE: D1
3 units

SOCI 015. Statistical Applications in the Social Sciences

Introduction to statistical applications, particularly statistical inference, including central tendency, variation, normal distributions, probability, estimation, hypothesis testing, measures of association, correlation, linear regression and the analysis of variance.

Prerequisite: Satisfaction of ELM requirement.
GE: B4
3 units

SOCI 057. Community Involvement and Personal Growth

Human development in community context, with an emphasis on civic responsibility. The influence of community engagement on individual physiological, social/cultural, and psychological well-being. Participation in a service-learning project in a multicultural organization.

GE: E
3 units

SOCI 080. Social Problems

Sociological analysis of selected contemporary social problems such as housing and homelessness, economy and employment, environment and consumerism, family and divorce, crime and drugs, politics and media, race and gender, wealth and poverty, war and peace. Required for majors.

CAN SOC 4
GE: D3
3 units

UPPER DIVISION**SOCI 100W. Writing Workshop**

Practice in improvement of writing and research skills appropriate to the field of sociology, including formal reports, journals and articles.

Prerequisite: Required for Sociology Majors, SOCI 1, ENGL 1B (with a grade of C or better); Completion of core GE, satisfaction of Writing Skills Test and upper division standing.
ABC/No Credit
GE: Z
3 units

SOCI 101. Social Theory

Comparative analysis of micro and macro sociological theories and their origins, including, but not limited to, conflict theories, consensus theories, structural functionalism, symbolic interaction and recent theoretical developments. Required for majors.

Prerequisite: SOCI 1 (or equivalent) and upper division standing.
Pre/corequisite: SOCI 100W.
3 units

SOCI 102. Introduction to Statistics

Introduction to measures of central tendency, variation, correlation and regression, probability, estimation and hypothesis testing.
Prerequisite: SOCI 1 (or equivalent).
3 units

SOCI 103. SPSS Computer Analysis

Statistical analysis of social science data using SPSS. Online course with periodic required on-campus meetings.

Prerequisite: SOCI 1 (or equivalent) and must have completed or be concurrently enrolled in an introductory statistics course.
Activity 2 hours.
1 unit

SOCI 104. Quantitative Research Methods

Quantitative research methods including survey research design, hypothesis formulation, questionnaire and interview design, scaling, sampling and data preparation and SPSS analysis. Completion of a class research project plus individual research reports. Required for majors.

Prerequisite: SOCI 1 or equivalent, SOCI 15 or SOCI 102 or approved Statistics course from another school; SOCI 100W, SOCI 101 and upper division standing.
3 units

SOCI 105. Qualitative Research Methods

Philosophy and logic of research design, interviewing techniques, field methods, issues of participant observation, theoretical perspectives, content analysis and qualitative microcomputer techniques. Required for Sociology majors.

Prerequisite: SOCI 1 or equivalent, SOCI 100W, SOCI 101 and upper division standing.
3 units

SOCI 107. Aging and Society

See GERO 107.
GE: S
3 units

SOCI 116. Global Society

Examination of global social issues, evaluation of the impact of change on world communities and analysis of the response of specific groups to emerging problems and opportunities. Required for majors.

Prerequisite: SOCI 1 or equivalent.
GE: D3
3 units

SOCI 120. Contemporary Social Issues

A current issue in contemporary society. Content differs each semester. Repeatable for 6 unit maximum of SOCI 120, SOCI 123 or any combination.

Prerequisite: SOCI 001 or equivalent.
Repeatable for credit
3 units

SOCI 122. Women in the Second Half of Life

See GERO 122.
3 units

SOCI 123. Sociology of the Future

Anticipated and possible social changes which could have an impact on American society and the rest of the world. Probable effects upon norms, values, styles of life, social inequality, education, the family, the economy and politics.

Prerequisite: SOCI 1 or instructor consent.
3 units

SOCI 133. Gerontology Field Work

See GERO 133.
Repeatable for credit
Credit / No Credit
3 units

SOCI 140. Television and Society

Television as a socializing agent, emphasizing the impact of television on human behavior, deviance, social institutions and the changing society.
Prerequisite: SOCI 1 or equivalent.
3 units

SOCI 145. Community Mental Health

See HS 145.
3 units

SOCI 146. Work, Power, and Leisure

Explores power in organizational settings where we work and play, and how those settings affect the family, the economy and communities. Settings examined may include corporations, cooperatives, social change organizations, community organizations, non-profit organizations such as hospitals and schools.

Prerequisite: SOCI 1 or equivalent.
3 units

SOCI 151. Violence in the Family

A sociological examination of violence in families focusing on the causes and consequences of violence and on the ways in which various social institutions and community agencies respond to violence among intimates.

Prerequisite: SOCI 1.
3 units

SOCI 152. The Youth Offender

Characteristics of juvenile and youthful offenders. Theories of causes and analysis of control and prevention measures.

Prerequisite: SOCI 1 or equivalent.
3 units

SOCI 153. Criminology

Sociological analysis of the causes of crime and society's reaction to crime, including adjudication and incarceration.

Prerequisite: SOCI 001 and SOCI 101.
3 units

SOCI 154. Sociology and Non-Conforming Behavior

Sociological analysis of behavior outside of social conventions including crime, mental illness, suicide and chemical dependency.

Prerequisite: SOCI 1 or equivalent.
3 units

SOCI 155. Victimology

Examination of the relationship between victim and offender; the behavior and attitudes of family, society and justice system toward the victim; nature and extent of loss, injury and damage to the victim.

Prerequisite: SOCI 1 or equivalent.
3 units

SOCI 156. Gangs and Mobs

A socio/historical examination of the emergence, evolution, persistence, activities and social structure of gangs and mobs, the effects of social factors, e.g., politics, law, technology and the economy, and consequences for communities and social institutions.

Prerequisite: SOCI 1.
3 units

SOCI 158. The Prison Community

Analysis of formal and informal systems of organization and interaction among inmates and staff. Effects of the social structure and external system on the organization of the prison community.

Prerequisite: SOCI 1 or equivalent.
3 units

SOCI 159. Violence and War

Examination of the causes and consequences of violence and war. Topics may include religious ideologies and their roles in fostering terrorism globally, nationally or locally. Analysis of peaceful alternatives to conflict.

Prerequisite: SOCI 001.

3 units

SOCI 160. Immigration and Identity

Examination of topics related to immigration and population movements. Includes the historical context of major migrations, legal, political and social issues and debates, opportunities, prejudices, immigrant communities, intergenerational tensions, and social and personal identity pressures.

Prerequisite: SOCI 1 or equivalent.

3 units

SOCI 161. City Life

The city as a setting for diverse lifestyles. Challenges facing urban dwellers and adaptive strategies they take. Comparison of city, suburb and rural countryside as social environments.

Prerequisite: SOCI 1 or equivalent.

3 units

SOCI 162. Race and Ethnic Relations

Analysis of racial and ethnic groups in American society; contacts and conflicts; prejudice and discrimination; dominant and subordinate group status; social structure of racial and ethnic inequality within society. Comparison of global race and ethnic relations.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: S

3 units

SOCI 163. Social Change

Analysis of causes, consequences and the role of individuals, organizations and social structures in producing social change.

Prerequisite: SOCI 1 or equivalent.

3 units

SOCI 164. Social Action

The tactics and strategies of social action. Topics may include applying social action to the local community, studying current and past U.S. and international social action organizations, or examining theories of social movements. Repeatable once when content changes.

Prerequisite: SOCI 1 or equivalent.

Repeatable for credit

3 units

SOCI 165. Poverty, Wealth and Privilege

An examination of the causes and consequences of inequality along the dimensions of social class, race/ethnicity, gender, citizenship status, and/or sexualities. Approach may be local, national or global.

Prerequisite: SOCI 1 or equivalent.

3 units

SOCI 166. Medical Sociology

Sociological analysis of medical and mental health institutions, values and roles. Patient-doctor interaction, influence of hospital structure on health care, social class and illness, cultural determinants of illness and related areas of old age (gerontology) and death.

Prerequisite: SOCI 1 or equivalent.

3 units

SOCI 169. Political Sociology

Analysis of cultural, social and institutional foundations of political policies and actions. Emphasis on patterns affecting political behavior and processes in the industrialized and developing countries.

Prerequisite: SOCI 1 or equivalent.

3 units

SOCI 170. The Modern Family

Historical development of the modern family; role expectations of husbands, wives, parents and children; the family as a small group, emphasizing the interactions of families and other social institutions.

Prerequisite: SOCI 1 or equivalent.

3 units

SOCI 171. Person and Society

Analyzes our "self" as socially created and maintained through everyday interactions. Explores how individuals manage and protect self identity in settings, e.g. school, family, work. Effects of race/ethnicity, gender, sexuality, and age on definitions of self and reality.

Prerequisite: SOCI 1 or instructor consent.

3 units

SOCI 172. Alternative Lifestyles

The nature of homosexuality; analyses of homosexual phenomena from "insider" and "outsider" perspectives. Current stereotypes and the homosexual liberation movement to win civil rights.

Prerequisite: SOCI 1 or equivalent.

3 units

SOCI 173. Socialization

Personality formation in the context of family, social interaction and institutions of socialization such as workplace, family and community. Emphasis on childhood and the social processes that mold basic beliefs and values in the formation of adult identity.

Prerequisite: SOCI 1 or equivalent.

3 units

SOCI 174. Sex and Love

An analysis of the social construction of love and sex (including the politics of love and sexual behaviors), across cultures, historical time, and generations. Examines the evidence that shows love is not universal ideal for marriage or sexual union and similar sexual behaviors have different meanings in different circumstances.

Prerequisite: SOCI 1 or equivalent.

3 units

SOCI 175. Sociology of Masculinity and Femininity

Examination and analysis of changing definitions of gender roles and the influence of socialization, education, mass media, marriage and family, ethnicity, social class, sexuality and religion on gender roles. Influence of feminism on men's and women's lives.

Prerequisite: SOCI 1 or equivalent.

3 units

SOCI 176. Small Group Processes

Examination of recent theories and research about small group processes and interaction. Includes studies of power, status, communication, cooperation, conflict resolution, task performance. Provides understanding of small formal and informal groups, including work groups and intimate relationships.

Prerequisite: SOCI 1 or equivalent.

3 units

SOCI 177. Society and Education

See SOCS 177.

3 units

SOCI 178. Sociology of Childhood

Examination of sociological issues, theories, and research on childhood from infancy to adolescence, including the role of social institutions in shaping the childhood experience and the emergence of peer cultures that change societies.

Prerequisite: SOCI 001.

3 units

SOCI 180. Individual Studies

Prerequisite: Instructor consent and department chair approval.

Repeatable for credit

Credit / No Credit

1-4 units

SOCI 181. Service Internship

Supervised placement in practical situations where sociologists are employed, including correctional services, community planning, industry, research, social action and social welfare agencies.

Prerequisite: SOCI 1 or equivalent, SOCI 100W, SOCI 101 and upper division standing, or graduate standing. Department Chair approval.

Repeatable for credit

Credit / No Credit

1-6 units

SOCI 182. Ethnicity and Aging

See AAS 182.

3 units

SOCI 187. United States Social History

See HIST 187.

Repeatable for credit

3 units

SOCI 193. Behavioral Science in Practice

See ANTH 193.

1 unit

SOCI 199H. Senior Honors Thesis

Preparation and writing of an original project. Repeatable for a total of 4 units.

Prerequisite: Sociology Honors Program student.

Repeatable for credit

Credit/No Credit/Report in Progress

1-4 units

GRADUATE**SOCI 200A. Methods of Social Research I: Research Design**

Focus on quantitative research methods used in the social sciences. Emphasis on survey research method, including statement of the research problem, literature review, hypothesis construction, measurement, sampling and data collection.

Prerequisite: SOCI 104 with a grade of "B" or better. 3 units

SOCI 200B. Methods of Social Research II: Statistical Techniques

Understanding of basic statistical concepts and procedures, development of a familiarity with advanced techniques such as multiple regression, and appreciation of strength, weaknesses, and uncertainty inherent in statistical analysis.

Prerequisite: SOCI 200A with a grade of "B" or better. 3 units

SOCI 201A. Sociological Theory I

Fundamental theoretical issues from the emergence of modern societies (Marx, Durkheim, Weber) to current debates about research, individuals, meanings, inequalities, institutions, and community change, and theory application. Content varies with instructor.

Prerequisite: SOCI 101 with grade of "B" or better.
3 units

SOCI 201B. Sociological Theory II

Analysis of contemporary social theories, with an emphasis on critical and interpretive traditions in sociology. Theoretical perspectives covered may include various micro sociological approaches, feminist and critical race theories, post-modernism and post-structuralism.

Prerequisite: SOCI 201A with a grade of "B" or better.
3 units

SOCI 223. Seminar in Sociological Issues

Analysis of a current issue in sociology which is not covered by other graduate seminars. Content differs each semester. Repeatable once with advisor consent when content changes.

Repeatable for credit
3 units

SOCI 253. Seminar in Advanced Criminology

A critical review of classical and contemporary theories and research in criminology. Evaluation of contemporary criminal justice and its relationship to theories of criminal behavior.

3 units

SOCI 254. Seminar in Deviance and Social Control

Historical and comparative theories of deviance, its function in society and its relation to formal and informal systems of regulation and control.

3 units

SOCI 256. Seminar in Contemporary Issues in Criminology

Analysis of a current issue in criminology which is not covered by other graduate seminars. Content differs each semester. Repeatable once with advisor consent.

Repeatable for credit
3 units

SOCI 258. Seminar in Advanced Corrections

A critical review of historical and contemporary theoretical models. Evaluation of current research on treatment, rehabilitation/punishment models and their use in adult and juvenile institutions and community settings.

3 units

SOCI 261. Seminar in Urban Sociology

Trends related to local, U.S., and globalization processes and their effects on changing social structures and patterns of life in cities. Analysis of implications for various populations of people and exploration of potential solutions.

3 units

SOCI 263. Seminar in Social Change

Theories of the origins and processes of social change. Analysis of efforts to control or to produce social change. Problems of research on the causes, effects and prediction of social change.

3 units

SOCI 269. Seminar in Political Sociology

The interrelationship between social structures and political institutions with special attention to questions of social inequality, power and legitimization in modern and developing societies.

3 units

SOCI 270. Seminar in the Modern Family

Comparative analysis of institutional forms and family small group systems including alternative life styles and minority families. Problems of the family. Changes in family roles and in family law.

3 units

SOCI 273. Selected Topics in Microsociology

Content differs each semester and may include such topics as personality, socialization, gender roles, small groups, self and role theory. Repeatable with advisor consent for a total of 6 units.

Repeatable for credit
3 units

SOCI 276. Small Group Theory and Research

Analysis of theoretical research programs in small groups, organizations, social psychology and family processes. Attention paid to logical articulation of theoretical structure and research design. Laboratory, field or clinical studies. Course is repeatable with advisor consent for a total of 6 units.

Repeatable for credit
3 units

SOCI 281. Internship in Sociology

Supervised placement in practical situations where sociologists are employed: correctional services, community planning, industry, counseling agencies and others. Course is repeatable for a total of 6 units.

Open to graduate students by arrangement with the department.

Repeatable for credit
Credit / No Credit
1-6 units

SOCI 285. Seminar in Social Inequality

Emphasis on qualitative research methods. Topics may include social class, race/ethnicity, gender, sexualities, citizenship status and the social construction of self and identity. Methodological issues involved in qualitative research will be addressed.

3 units

SOCI 294. Seminar in Research Design

Advanced problems in research design. Evaluation of theoretically relevant multivariate models, including design of experimental, sampling and statistical models, interpretation of results and report writing.

Prerequisite: SOCI 200.
Repeatable for credit
3 units

SOCI 298. Special Study

Advanced individual research and projects. May not be related to thesis topic. Course is repeatable for a total of 4 units.

Prerequisite: Consent of instructor and approval by graduate advisor or department chair.
Repeatable for credit
Credit / No Credit
1-4 units

SOCI 299. Master's Thesis or Project

Prerequisite: Consent of thesis committee chair and approval by graduate advisor or department chair.
Repeatable for credit
Credit/No Credit/Report in Progress
1-6 units

Software Engineering

Software Engineering

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 Mark Stamp
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Assistant Professors

Magdalini Eirinaki
 Teng-Sheng Moh
 Soon-Tee Teoh

Curricula

- BS, Software Engineering
- MS, Software Engineering (see Computer Engineering)

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 coursework 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.

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.

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.

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 24-26

MATH 030 or MATH 030P (3-5); MATH 031, MATH 032 and MATH 042 (9); MATH 133A or MATH 142 (4); PHYS 050 or PHYS 070 (4); PHYS 051 or PHYS 071 (4)

Required for the Major 76

Engineering Support Courses 12

ENGR 100W or CS 100W (3); ISE 130 or MATH 161A (3); MATH 129A and ISE 164

Required Courses in Software Engineering 60

SE 046A, SE 046B, SE 104, SE 120, SE 131, SE 133, SE 133L, SE 135, SE 137, SE 146, SE 148, SE 149, SE 152, SE 157A, SE 157B, SE 165, SE 166, SE 187, SE 195A and SE 195B

Approved Upper Division Electives 2-4

Selected in consultation with the student's advisor

Total Units Required 132

MS, Software Engineering

See the Computer Engineering Department for the description.

Semester Units

Plan A (With Thesis) 30

Common Core 9
 Area of Specialization and Approved Electives 15
 Thesis 6

Plan B (Without Thesis) 30

Common Core 9
 Area of Specialization and Approved Electives 15
 Graduate Project 6

Total Units Required 30

Courses

SOFTWARE ENGINEERING

LOWER DIVISION

SE 046A. Introduction to Programming

See CS 046A.

4 units

SE 046B. Introduction to Data Structures

See CS 046B.

4 units

UPPER DIVISION

SE 102. Assembly Language Programming

See CMPE 102.

3 units

SE 104. Fundamentals of Software Engineering

See CMPE 104.

3 units

SE 110L. Advanced Computing Laboratory

See CS 110L.

Repeatable for credit

Credit / No Credit

1 unit

SE 116A. Introduction to Computer Graphics

See CS 116A.

3 units

SE 116B. Computer Graphics Algorithms

See CS 116B.

3 units

SE 120. Computer Organization and Architecture

See CMPE 120.

3 units

SE 123A. Bioinformatics I

See CS 123A.

3 units

SE 123B. Bioinformatics II

See CS 123B.

3 units

SE 130. Windows Programming

See CS 130.

3 units

SE 131. Software Engineering I

See CMPE 131.

3 units

SE 133. Software Engineering II

See CMPE 133.

3 units

SE 133L. Software Engineering Laboratory II

See CMPE 133L.

1 unit

SE 134. Computer Game Design and Programming

See CS 134.

3 units

SE 135. Object-Oriented Analysis and Design

See CMPE 135.

3 units

SE 137. Wireless Mobile Software Engineering

See CMPE 137.

3 units

SE 146. Data Structures and Algorithms

See CS 146.

3 units

SE 148. Computer Networks I

See CMPE 148.

3 units

SE 149. Operating Systems

See CS 149.

3 units

SE 152. Programming Paradigms

See CS 152.

3 units

SE 153. Concepts of Compiler Design

See CS 153.

3 units

SE 154. Formal Languages and Computability

See CS 154.

3 units

SE 155. Introduction to the Design and Analysis of Algorithms

See CS 155.

3 units

SE 156. Introduction to Artificial Intelligence

See CS 156.

3 units

SE 157A. Introduction to Database Management Systems

See CS 157A.

3 units

SE 157B. Database Management Systems II

See CS 157B.

3 units

SE 158B. Computer Network Management: Principles and Technology

See CS 158B.

3 units

SE 163. Computer Graphics Program Design

See CMPE 163.

3 units

SE 165. Software Engineering Process Management

See CMPE 165.

3 units

SE 166. Information Security

See CS 166.

3 units

SE 168. Software Design Studio I

See CMPE 168.

3 units

SE 169. Software Design Studio II

See CMPE 169.

3 units

SE 174. Server-side Web Programming

See CS 174.

3 units

SE 180. Individual Studies

See CMPE 180.

Repeatable for credit

Credit / No Credit

1-3 units

SE 187. Software Quality Testing

See CMPE 187.

3 units

SE 195A. Senior Computer Engineering Design Project I

See CMPE 195A.

1 unit

SE 195B. Senior Computer Engineering Design Project II

See CMPE 195B.

3 units

Technology

College of Engineering

Industrial Studies 111
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Seth Bates
Julio Garcia
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Associate Professors

Ali Zargar, Chair

Curricula

- BS, Industrial Technology, Concentration in Electronics and Computer Technology
- BS, Industrial Technology, Concentration in Manufacturing Systems
- Minor, Electronics
- Minor, Industrial Technology
- Minor, Manufacturing
- MS, Quality Assurance

The Department of Aviation and Technology offers two undergraduate programs in Industrial Technology (accredited by the National Association of Industrial Technology): Industrial Technology with concentration in Electronics and Computer Technology, and Industrial Technology with concentration in Manufacturing Systems. The department also offers preparation for the teaching credential in Industrial Technology Education. Minors are also available. The curricula have as a common purpose the applied exploration of the industrial environment to prepare students for technical and managerial 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 skills in either manufacturing or electronics and computer technology.
2. Demonstrate strong communication, critical thinking and interpersonal skills.
3. Apply a knowledge of current programming languages 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.
7. Learn about product life cycle and how products are manufactured.
8. Learn to apply knowledge to the planning and management of industrial and service sector operations.
9. Demonstrate leadership skills for 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 the quality assurance professional who wants to develop competencies in statistical quality control and sampling, quality project management, systems' reliability, and an awareness of the human factors in quality assurance programs in a variety of industrial and service sector environments. Upon completion of the requirements for the MS degree, quality assurance professionals will have acquired the technical and managerial foundation for the successful development and administration 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 in business and industry.

BS – Industrial Technology, Concentration in Electronics and Computer 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. Electronics and Computer Technology prepares you for a career in electronics and computer fields. You will gain knowledge, skills, and practical experiences in 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 electronic testing equipment, computer hardware and software to solving problems in electronics and computer industry. You will apply skills in automation technology; microprocessor systems; control systems; analog and digital systems; and computer simulation processes to design, analyze, and solve electronic circuits and systems. Graduates of the BSIT in Electronics and Computer Technology will be able to:

1. Demonstrate knowledge of current programming languages.
2. Solve electronic circuit and electronic systems problems in analytical and creative ways.
3. Apply analog and digital communication techniques.
4. Use computer-aided design including printed circuit boards and integrated circuits.
5. Use microprocessors and associated circuits in test simulations and system interfacing of processes.
6. Develop and implement software systems for control of electronic industrial processes.
7. Integrate the processes of instrumentation and automation in the electronics industry.
8. Demonstrate skills in the control of electronics manufacturing processes, production scheduling and testing.
9. Apply telecommunication theory and management.
10. Design and analyze electronics circuits and systems.

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 Education2

Preparation and/or Support for the Major22

CS 049C or CMPE 046 (3); ECON 001B (3); CHEM 001A (5); PHYS 002A and PHYS 002B (8); MATH 071 (3)

Electronics and Computer Technology Concentration59

ME 106 (3); ISE 102 (3); TECH 031, TECH 060, TECH 062, TECH 063, TECH 065, TECH 101, TECH 115, TECH 160, TECH 162, TECH 163, TECH 164, TECH 166, TECH 167, TECH 168, TECH 169, TECH 190 and TECH 198 (50); ENGR 100W (3)

Business Minor15

BUS 090, BUS 142 and BUS 186 (9); BUS 141 or BUS 144 (3); BUS 140 or BUS 145 (3)

Total Units Required128

Additional requirement for graduation: To qualify for a baccalaureate degree in Industrial Technology with an Electronics and Computer Technology concentration, 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. You will gain knowledge, skills, and practical experiences in innovative manufacturing processes and management, computer integrated manufacturing, robotics and control systems, and computer aided manufacturing.

This dynamic and expanding field applied computer and advanced technologies to solving problems in manufacturing systems, computer aided design and manufacturing (CAD/CAM), and computer integrated manufacturing (CIM) to basic and advanced industrial manufacturing design. Graduates of the BSIT in Manufacturing Systems will be able to:

1. Demonstrate skills in the planning and design of manufacturing processes.
2. Describe the product life cycle and how products are manufactured.
3. Design and plan industrial facilities.
4. Select and operate computer numerical controlled and other machines.
5. Describe 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.
6. Select, analysis and use polymers, composite materials, and materials in the design of manufactured products.

- Semester Units
7. Apply the theory of computer-integrated manufacturing (CIM), including the computer-aided design/computer-aided manufacturing (CAD/CAM) interface to industrial problems and settings.
 8. Use the principles of production scheduling and planning in an industrial environment.
 9. Apply knowledge of statics to manufacturing product design.
 10. Use robots and mechatronics in a CIM environment.
 11. Demonstrate an understanding of materials management including Just-in-Time (JIT) and Materials Resource Planning (MRP).
 12. Integrate design, manufacturing, and materials into the design and development of new products.
 13. Apply the principles of Lean Manufacturing to manufacturing and soft systems.
 14. Analyze the appropriate use of marketing to both internal and external customers.
 15. Apply OSHA and NIOSH principles to facilities design and management.

Semester Units
General Education Requirements36

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 Education2

Preparation and/or Support for the Major22

CS 049C or CMPE 046 (3); ECON 001B (3); CHEM 001A (5); PHYS 002A and PHYS 002B (8); MATH 071 (3)

Manufacturing Systems Concentration58

ME 106 and ISE 102 (6); TECH 020, TECH 025, TECH 031, TECH 040, TECH 045, TECH 046, TECH 048, TECH 060, TECH 101, TECH 115, TECH 140, TECH 141, TECH 145, TECH 147, TECH 149, TECH 190 and TECH 198 (49); ENGR 100W (3)

Business Minor with Management Emphasis15

BUS 141 or BUS 144 (3); BUS 090, BUS 142 and BUS 186 (9); BUS 140 or BUS 145 (3)

Electives1

Total Units Required128

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 101 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 048, TECH 140, TECH 145, TECH 147 (at least three units must be upper division)	
Total Units Required	12

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 Baldrige 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 coursework 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
<i>The terminal project proposal should be developed after all other coursework is finished or very close to completion (i.e. during the second to last semester before the expected date of graduation).</i>	
TECH 298 (Plan B) or TECH 299 (Plan A)	
Total Units Required	30

Courses**TECHNOLOGY****LOWER DIVISION****TECH 020. Design and Graphics**

See ME 020.

2 units

TECH 025. Introduction to Materials

Study of industrial materials and their applications including metals, polymers, and composite materials. Selection principles. Laboratory experimentation, testing and evaluation procedures.

Prerequisite: CHEM 1A and PHYS 2A (or equivalent).

Lecture 2 hours/lab 3 hours.

3 units

TECH 027. Fundamentals of Architectural Graphics

Introduction to architectural standards, practices and symbol conventions to communicate architectural design ideas with computer-aided drafting.

Activity 6 hours.

3 units

TECH 031. Quality Assurance and Control

Introduction to concepts and statistical methods that companies use to manage and improve quality. Sampling inspection, statistical process control, quality function deployment, cost of quality, design of experiment and Taguchi's method for designing in quality.

Prerequisite: BUS 90 or equivalent.

Lecture 2 hours/lab 3 hours.

3 units

TECH 040. Product Design I

Introduction to product design process.

Introduction to three-dimensional solid modeling. Computer-aided design, manufacturing, and analysis using commercially available software. Familiarize students with the design process and design for manufacturing.

Prerequisite: BSIT; TECH 20, TECH 25; ID: DSID 32A; ME 20.

Lecture 2 hours/lab 3 hours.

Repeatable for credit

3 units

TECH 045. Facilities Design and Development

Construction, planning, and maintenance of physical facilities and equipment as related to plant facilities layout/design, regulatory and environmental compliance, safety/security, energy conversion, and process improvement. Production line planning. OSHA and NIOSH standards.

Prerequisite: TECH 20.

3 units

TECH 046. Machine Operation and Management

Current machining processes using computer numerically-controlled and manual machines, including turning, milling, drilling, grinding, and sawing machines. Manual and computer-aided part programming. Management of machining environment including processes, tooling, instruments, equipment, personnel safety.

Prerequisite: TECH 20.

Lecture 2 hours/lab 3 hours.

3 units

TECH 048. Product Prototyping and Non-Traditional Manufacturing Processes

Design and development of prototype products. Traditional and non-traditional processes including chemical, electromechanical, mechanical, and thermal. Building jigs, fixtures, patterns, and molds. Emphasis on manufacturing products by casting and molding. Includes mold making and machining for the polymer industry.

Prerequisite: TECH 46.

Lecture 2 hours/lab 3 hours.

3 units

TECH 060. Basic Electronics

DC and AC theory; Ohm's Law, Kirchhoff's Laws, Power Laws, network theorems, schematic diagrams, instrumentation and measurement, and functions of discrete components.

Prerequisite: College algebra and physics.

Pre/Corequisite: MATH 71.

Lecture 2 hours/lab 3 hours.

3 units

TECH 062. Analog Circuits

Semiconductor theory; p-n junction, bipolar transistors, JFETs and MOSFETs, optoelectronic devices. Operational amplifiers and 555 timers. Device applications: comparators, signal generators, active filters, instrumentation amplifiers, voltage regulators and power supplies.

Prerequisite: TECH 60.

Lecture 2 hours/lab 3 hours.

3 units

TECH 063. Digital Circuits

Logic gates emphasizing TTL and CMOS. Design techniques. Combinational circuits, counters, registers, multiplexers, demultiplexers, encoders, decoders, DAC, ADC and ALU.

Prerequisite: TECH 60.

Lecture 2 hours/lab 3 hours.

3 units

TECH 065. Networking Theory and Application

Introduction to networks and networking concepts. Network architectures. Network media. Configuring network operating systems. Making networks work. Network topology, standards, and protocols. Basic network design.

Lecture 2 hours/lab 3 hours.

3 units

TECH 098. Technology and Women

Exploration of the interaction of gender with technology. Myths and misconceptions about gender roles and technology. Stereotypes of men and women. Focus on the technological changes since 1900 and how these have affected both men and women.

GE: D1

3 units

TECH 099. Statics and Dynamics for Manufacturing Systems

Study of bodies in equilibrium and motion. Applications to particles, two-dimensional and three-dimensional structural systems. Applications of statics and dynamics in manufacturing.

Prerequisite: MATH 71, PHYS 2A.

3 units

UPPER DIVISION**TECH 101. Product Design, Development and Manufacturing**

Product design, development, and manufacturing in the product life cycle. Comparison of functions and systems in traditional versus integrated manufacturing environments. Benefits of integrated approach, development cycle time, manufacturing/material cost, quality, time-to-market.

Prerequisite: ENGL 1A.

3 units

TECH 115. Automation and Control

Theory and application of automation elements including analog and digital sensors, controllers, indicators, actuators. Control modes for proportional, derivative, and integral control systems. Hands-on integration practices among PLC, robots, automatic identification devices, computers, and other industrial equipment.

Prerequisite: TECH 60.

Lecture 2 hours/lab 3 hours.

3 units

TECH 128. Architectural Structures

Graphic representation of structures in architecture. Development of freehand drawing skills and drafting skills related to standard architectural convention. Design and preparation of presentation drawings and a complete set of construction documents.

Prerequisite: TECH 27.

Activity 6 hours.

3 units

TECH 139. Quality Management

Planning, designing and managing the performance of quality in an organization. Synthesis, modeling and application of total quality management to case studies in manufacturing and service industries.

Prerequisite: TECH 31.

Lecture 2 hours/lab 3 hours.

3 units

TECH 140. Product Design II

Product design with emphasis on process and material selection. Laboratory exercises in process design and development. Planning for manufacturing.

Prerequisite: TECH 40.

Activity 6 hours.

Repeatable for credit

3 units

TECH 141. Product Design III

Explorations of interrelationships of design to function and aesthetics. Focus on solid model representations, design-build decision making, design for manufacturability, and assembly based on aesthetics and product functionality.

Prerequisite: TECH 140.

3 units

TECH 143. Polymers and Composites Fabrication Technology

Fundamental aspects of modern manufacturing technology using polymeric and composite materials. Hands-on lab exercises in casting, molding, coating, thermoforming and fiber reinforcement. Concepts of design, analysis and fabrication.

Prerequisite: TECH 20, CHEM 1A and PHYS 2A.

Activity 6 hours.

3 units

TECH 145. Lean Manufacturing

Exploration and practice of techniques for reducing waste to optimize the value stream in both manufacturing and non-manufacturing environments. Toyota Production System, Value Stream Mapping, 7 Wastes, 5S, Just-in-Time, TPM, Kaizen.

Prerequisite: BUS 140 or BUS 145 or ISE 140.
3 units

TECH 147. Analysis and Management of Production Systems

Design, operation, and control of production systems using computational and simulation techniques. Emphasis is on the physical design of high performance manufacturing and will include production flow, scheduling, work flow, layout of manufacturing plants, and material handling.

Prerequisite: TECH 46.
Pre/corequisite: TECH 140.
Lecture 2 hours/lab 3 hours.
3 units

TECH 149. Computer Integrated Manufacturing Systems

Integration of all aspects of a manufacturing enterprise using computer-integrated manufacturing (CIM) technologies. Design development and implementation of manufacturing systems using project management techniques and team work.

Prerequisite: Tech 146, Tech 147, ME 106.
Lecture 2 hours/lab 3 hours.
Repeatable for credit
3 units

TECH 160. Microprocessors Theory and Applications

Microprocessor concepts and applications to testing and data management. Assembly language and high-level language programming and techniques, including assembling, compiling, debugging. Current trends and issues in microprocessors.

Prerequisite: TECH 63; CS 49 or CMPE 46.
Lecture 2 hours/lab 3 hours.
3 units

TECH 162. Analog Systems Design and Applications

System level concepts; analog systems building blocks; system problems including grounds, stability, accuracy and compensation. Design, analysis and applications of analog systems.

Prerequisite: TECH 62.
Lecture 2 hours/lab 3 hours.
3 units

TECH 163. Telecommunications Systems

Communication systems. Types of Modulation. Transmitters and receivers. Digital communications. Data transmission. Digital modulation and modems. Multiplexing and multiple-access techniques. Wireless communication systems. Microwave devices. Satellite communications. Fiber optics systems.

Prerequisite: TECH 62, TECH 63.
3 units

TECH 164. Electronics Manufacturing

Computer-aided design and manufacturing of electronic systems. PCB fabrication and manufacturing. IC technology and testing techniques. Various electronics manufacturing techniques such as SMT, MCM, TAB, and emerging technologies. Current trends and issues in electronics manufacturing.

Prerequisite: TECH 62, TECH 63.
Lecture 2 hours/lab 3 hours.
3 units

TECH 166. Networking Management and Administration

Internetworking devices and systems. Network design and management. Network Administration and Support. Enterprise and Distributed Networks. Wide-Area and Large Scale Networks. Solving problems. Using the Resources of the Internet. Future networking technologies.

Prerequisite: TECH 65.
Lecture 2 hours/Lab 3 hours.
3 units

TECH 167. Control Systems

Theory and applications of feedback systems, transfer functions and block diagrams. Transducers, analog and digital controllers, signal conditioners and transmission. Analysis, testing, and troubleshooting of electronic systems with feedback.

Prerequisite: TECH 63, TECH 115.
Pre/Corequisite: TECH 162.
Lecture 2 hours/lab 3 hours.
3 units

TECH 168. Analysis and Applications of Integrated Circuits

Analysis, testing, and troubleshooting of bipolar and unipolar integrated circuits. Masking techniques. Analysis, testing, interpretation, identification, and applications of analog and digital integrated circuits.

Prerequisite: TECH 160.
Pre/corequisite: TECH 162.
Lecture 2 hours/lab 3 hours.
Repeatable for credit
3 units

TECH 169. Applied Electronic Design

Design, test, simulation, development and implementation of electronic systems for control of industrial processes using project management techniques and team work. Hardware, software, and system interfacing.

Pre/corequisite: TECH 167, TECH 168.
Lecture 2 hours/lab 3 hours.
3 units

TECH 180A. Individual Studies in Electronics and Computer Technology

Prerequisite: Upper division standing and instructor consent.
Repeatable for credit
Credit / No Credit
1-4 units

TECH 180B. Individual Studies in Manufacturing Technology

Prerequisite: Upper division standing and instructor consent.
Repeatable for credit
Credit / No Credit
1-4 units

TECH 180H. Individual Studies in Materials Technology

Prerequisite: Upper division standing and instructor consent.
Repeatable for credit
Credit / No Credit
1-4 units

TECH 180J. Individual Studies in Technology Issues

Prerequisite: Upper division standing and instructor consent.
Repeatable for credit
Credit / No Credit
1-4 units

TECH 189. Multimedia Production Seminar

Project-oriented course and seminar focused on allowing advanced students from a variety of disciplines to create interactive multimedia projects. Use of computer applications to plan, design, and develop web pages and desktop multimedia.

Prerequisite: Upper division standing and advisor approved course in computer fundamentals.
3 units

TECH 190. Senior Seminar in Technology

Current industry analysis and career development. Technology trends in manufacturing and electronics. Leadership skills for a technology professional. Ethics for technology managers.

Prerequisite: Graduating senior, major form completed.
2 units

TECH 195. Cooperative Internship

Assignment to companies for industrial experiences based on student's instructional program and previous experience. Special projects concurrent with work experience.

Prerequisite: Senior standing.
Credit / No Credit
3 units

TECH 197. Cooperative Education Project

See ENGR 197.
3 units

TECH 198. Technology and Civilization

History, development, and use of technology in different cultures. Technology's impact on society, global environment, the workplace, cultural values, gender roles, and newly industrialized countries of the world.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.
GE: V
3 units

TECH 199A. Special Topics in Electronics and Computer Technology

Special topics in Electronics and Computer Technology. Content varies from semester to semester. Repeatable for a total of 6 units.

Prerequisite: Instructor consent.
Repeatable for credit
3 units

TECH 199B. Special Topics in Manufacturing Systems

Special topics in Manufacturing Systems. Content varies from semester to semester. Repeatable for a total of 6 units.

Prerequisite: Instructor consent.
Repeatable for credit
3 units

GRADUATE**TECH 200. Research Methods for Engineering and Technology**

Current applied research methods applied to problems in engineering, technology, and other technical fields. Exposure to current literature, scientific/technological research ethics, research and experimental design and methods, skills in research proposal development and locating funding.

Prerequisite: STAT 115 (or equivalent) and graduate standing.
3 units

TECH 230. Six-Sigma and Continuous Improvement Systems Management

Six-Sigma quality systems for design production and business processes. Statistical foundations, implementation strategies, and practical industrial applications. Methods and practices of achieving continuous quality improvement, defect reduction, project planning and management methods to achieve universal participation in process improvement.

Prerequisite: STAT 115 or equivalent.
3 units

TECH 231. Systems Reliability and Maintainability

Analysis of models for systems reliability including static, dynamic, and probabilistic engineering models; reliability estimation and optimization, life cycle prediction techniques; failure modes and effects analysis; maintainability prediction and analysis.

Prerequisite: TECH 230.
3 units

TECH 232. Advanced Statistical Process Control

Analysis of advanced statistical process control (SPC) systems for monitoring and controlling process performance. Statistical methods for sample selection, probability theory, partition of variation, blanket studies, out-of-control action plans, process capability measurement, and SPC implementation strategies and analysis.

Prerequisite: STAT 115.
3 units

TECH 233. Design and Analysis of Experiments

Analysis of experimental design strategies for process and design improvement. Industrial application of single factor, multi-factor, and optimization designs. Experimental analysis using t-tests, ANOVA, Chi-square, linear and multiple regression techniques. Model building and model validation.

Pre/Corequisite: TECH 232.
Repeatable for credit
3 units

TECH 234. Quality Systems Management: ISO 9000 and 14000

Strategies for developing and implementing ISO standards: Project management and planning, cost estimation, supply chain management, audit plans and documentation systems for ISO system compliance. Analysis of ISO 9000 and 14000 quality systems for product design, development and production.

3 units

TECH 235. Measurement Systems and Analysis

Analysis of variables and attributes methods for measurement systems analysis and control including: repeatability, reproducibility, accuracy, linearity and stability. A survey of measurement and testing systems; dimensional metrology, destructive and nondestructive testing, calibration methods, and inspection equipment and techniques.

Prerequisite: TECH 232.
3 units

TECH 236. Foundations in Quality Assurance for Software

Analysis of software development strategies, design and configuration control systems, development standards, performance measurement, documentation and revision control systems, defect reduction methods, modular design approaches, and software maintainability.

Prerequisite: TECH 232, TECH 200, TECH 234, CS 46A or equivalent.
3 units

TECH 239. Design Assurance in Product Development

Analysis of product development strategies, understanding design constraints and market conditions, design and configuration control systems, documentation and revision control systems, design for manufacturability, phase review approaches for new product introduction, design reviews, and developing and maintaining design guidelines.

Prerequisite: TECH 200, TECH 230, and TECH 234.
3 units

TECH 290. Graduate Problems

Graduate study or research of technical problems.

Prerequisite: TECH 200 and instructor consent.
Repeatable for credit
Credit / No Credit
2-4 units

TECH 298. Graduate Project

Graduate study research of professional problems.

Prerequisite: Admission to candidacy for the master's degree and instructor consent.
Repeatable for credit
Credit / No Credit
2-4 units

TECH 299. Master's Thesis

Prerequisite: Admission to candidacy for the master's degree and instructor consent.
Repeatable for credit
Credit/No Credit/Report in Progress
2-6 units

TECHNOLOGY EDUCATION**UPPER DIVISION****TEED 184Y. Student Teaching II: Classroom Teaching**

Minimum 80-120 class periods of classroom, teaching laboratory or field teaching in appropriate single subjects, grades K-12 and related teaching activities and seminars.

Prerequisite: Joint approval of major and Education departments.
Repeatable for credit
Credit / No Credit
4-6 units

TEED 184Z. Student Teaching III: Classroom Teaching

May be in different subject/school and will be at a different grade level.

See TEED 184Y.
Repeatable for credit
Credit / No Credit
4-6 units

TEED 313. Foundations and Methods of Technology Education

Organization and preparation of course materials for industrial education classes: course content, curriculum development, teaching methods, evaluation and physical plant facilities. Use and implementation of instructional technologies in the educational environment.

Prerequisite: Senior standing.
Education workshop 6 hours.
3 units

TEED 319. Special Problems in Industrial Arts Education

Repeatable for credit
Credit / No Credit
2-4 units

Television, Radio, Film and Theatre

College of Humanities and the Arts

Hugh Gillis Hall 100
408-924-4530

Professors

Michael H. Adams, Chair
Buddy E. Butler
James K. Culley
James R. Earle
Amy Glazer
Robert F. Jenkins
David Kahn
Kimberly K. Massey
Elizabeth M. Poindexter
Karl E. Toepfer
Ethel Pitts Walker
Yen Lu Wong

Associate Professors

Babak Sarrafan
Scott Sublett

Assistant Professors

Alison McKee

Curricula

- BA, Theatre Arts
- BA, Theatre Arts, Preparation for Teaching
- BA, Radio-Television-Film
- Minor, Theatre Arts
- Minor, Radio-Television-Film
- Minor, Musical Theatre
- MA, Theatre Arts

The department offers curricula leading to the BA – Radio-Television-Film, BA – Theatre Arts, 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, and multimedia production as well as courses in history 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, both areas of the Department – 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 program 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 www.tvradiofilmtheatre.com

Our Facility

We have a fully operational TV studio, 24 hour a day radio station KSJS-FM, six audio production studios, two post production editing studios, a multimedia lab, two fully equipped live theatres, also used as film sound stages, a scene and costume shop, lighting and sound production facilities, all supported by an outstanding faculty and staff of artists, managers and technicians.

Internships

Television, Radio, Film and Theatre students are encouraged to complete an off-campus internship during their senior year in order to gain real world experience and make practical applications of what they have learned in class. Students are placed in radio and television stations, media production companies, Bay Area theatres, and Silicon Valley multimedia and Internet companies.

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 coursework 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

	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	33
TA 100W and TA 198 (6); RTVF 077, RTVF 082, RTVF 091, RTVF 110, RTVF 150, RTVF 171, RTVF 173, RTVF 175 and RTVF 176 (27)	
Electives	12
Complete twelve units from: RTVF 094, RTVF 098, RTVF 155, RTVF 166, RTVF 170A, RTVF 170B, RTVF 172, RTVF 177, RTVF 181, RTVF 182A, RTVF 185, RTVF 188, RTVF 190, RTVF 192, RTVF 194, TA 116, TA 129, TA 141, TA 142, TA 163, TA 199H	
Required Minor	15-21
A minor in a related area approved by the advisor and the minor department selected. Suggested areas include: theatre arts, journalism, advertising, public relations, speech communication, business administration, photography, psychology, sociology, political science, history, English and meteorology. Any area is acceptable that provides content support to the art, science and business of electronic media.	
Electives	1-7
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	57
Preparation and/or Support of the Major	12
TA 005, TA 010, TA 100W and TA 127	
Major Requirements	45
Core Courses	30
TA 011, TA 015, TA 017, TA 051A, TA 051B, TA 051C, TA 116, TA 120, TA 121, TA 151, TA 153 and TA 154	
Elective Emphasis (Choose One)	15
Acting	15
Complete fifteen units from: TA 064, TA 103, TA 110, TA 112, TA 113, TA 117, TA 125, TA 130, TA 131, TA 142, TA 148, TA 167, TA 190, TA 191, TA 198, RTVF 170A, RTVF 170B	
Directing	15
Complete fifteen units from: TA 110, TA 112, TA 117, TA 128, TA 129, TA 161, TA 190, TA 191, TA 195, TA 198, RTVF 110, RTVF 170A, RTVF 170B, RTVF 175, RTVF 176, RTVF 181	
Design and Technology	15
Complete fifteen units from: TA 064, TA 105, TA 112, TA 117, TA 128, TA 129, TA 141, TA 142, TA 158, TA 161, TA 163, TA 164, TA 190, TA 191, TA 195, TA 198	
Writing and Research	15
Complete fifteen units from: TA 112, TA 117, TA 128, TA 129, TA 131, TA 190, TA 191, TA 198, RTVF 110, RTVF 173, RTVF 175, RTVF 181	
Theatre Education	15
Complete fifteen units from: TA 103, TA 110, TA 112, TA 113, TA 117, TA 131, TA 148, TA 158, TA 161, TA 167, TA 180, TA 190, TA 191	
Electives	19
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 125A (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	44
TA 005, TA 011, TA 015, TA 064, TA 105, TA 116 and TA 151 (20); TA 153 or TA 154 (3); TA 051A, TA 051B, TA 051C, TA 180, TA 195 and TA 198 (12); TA 100W (3); Complete two courses from: TA 120, TA 121, TA 127, TA 128 (6)	
Electives	5
Total Units Required	120

Minor – Radio-Television-Film

	Semester Units
RTVF 077, RTVF 082, RTVF 091, RTVF 110 and RTVF 171 (15); Electives, with approval of minor advisor (3)	18
Total Units Required	18

Minor – Musical Theatre

	Semester Units
Music	7-9
Two music courses (MUSC 26A or 26B recommended) or vocal ensembles (including World Music Choir); MUSC 186 (2)	
Dance	7-9
Two dance technique courses; DANC 112 (2), DANC 186 (2) and DANC 194A (1)	
Theatre Arts	3-5
TA 190	
Total Units Required	17-23

Minor – Theatre Arts

	Semester Units
Required Core	6
TA 010 and TA 011	
Pathways	15
Performance	15
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)	
Directing	15
TA 005 (3); TA 051A, TA 051B and TA 051C (3); TA 116 and TA 117 (6); theatre arts elective (3)	
Design	15
TA 051A, TA 051B and TA 051C (3); TA 105 (3); TA 151, TA 153 or TA 154 (3); TA 158 or TA 161 (3); theatre arts elective (3)	
Dramatic Writing	15
TA 005 (3); TA 120, TA 121 or TA 127 (3); TA 128 or TA 129 (3); TA 131 (3); theatre arts elective (3)	
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 Theatre Arts, 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 theatre arts, will be determined by the graduate coordinator or department chair. Coursework 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. 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.

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 received acceptance of Thesis Proposal from the department graduate committee.

Completing Requirements for the Master's Degree

With the assistance of a faculty advisor, the applicant develops a proposed Master's degree program according to Plan A, as outlined below. The content will be determined by the individual student's background, area of concentration and thesis. All programs will include an eight-unit core: TA 200 Graduate Research in Theatre Arts, TA 201 Theory of Theatre and Performing Arts, and TA 260 Graduate Problems in Theatre Arts, which must be taken at the first opportunity after enrollment; as well as an additional 22 units to include a minimum of 15 units of 200-level courses of which 6 units must derive from the cycle of four seminars offered by the department (TA 220, 221, 241, 270). 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)

A program will be planned with the advisor and submitted to the department graduate committee for approval. The content will be determined according to the individual student's background, area of concentration and the thesis area. The program will include a minimum of two seminars in the department and a maximum of four units for the thesis. See Thesis section of this catalog.

With this program the thesis candidate takes an oral examination focusing on the thesis.

	Semester Units
Required Courses	8
TA 200, TA 201 and TA 260	
Approved Electives	18-21
Seminars	6
Complete two courses from: TA 220, TA 221, TA 241, TA 270	
Electives	12-15
Approved 100- 200-level electives	
Thesis	1-4
TA 299 (Plan A)	
Total Units Required	30

A Culminating Examination is required.
Plan A requires Oral Defense of the thesis.

Courses**RADIO-TELEVISION-FILM****LOWER DIVISION****RTVF 010. The Art of Film**

Study of the formal, aesthetic, historical, and cultural contexts of film as an art form.

GE: C1

3 units

RTVF 040. Telecommunications and Society

Investigates the development and diffusion of telecommunications technologies in American society with emphasis on how they impact social structures, change ways of knowing, affect global relationships, and influence cultural groups.

Prerequisite: Basic computer skills (MAC or PC).

3 units

RTVF 064. Makeup for Stage and Video

See TA 064.

CAN DRAM14

3 units

RTVF 077. Broadcast Communications

Analysis of growth of commercial and noncommercial radio, television and cable broadcasting in the U.S. Examination of programming, government regulation, advertising, networking, development of electronic media technologies and world systems of broadcasting.

3 units

RTVF 082. Introduction to Film

The art, history, production elements and judgment criteria of the motion picture.

3 units

RTVF 091. Introduction to Radio and Television Production

Introduction to fundamentals of radio and television production.

Lecture 2 hours/activity 2 hours.

3 units

RTVF 094. KSJS On-Air Operations

On-Air operation of campus radio station KSJS-FM, FCC, equipment, D.J. interview, sports; all activities and processes required for live broadcasting, music, public service and community service programming.

3 units

RTVF 098. Film and Television Aesthetics

Aesthetic analysis of video, film, and related new electronics media based on an examination of fundamental image and sound elements.

3 units

UPPER DIVISION**RTVF 105. Graphics for Stage and Video**

See TA 105.

3 units

RTVF 110. Electronic Media and Culture

Critical survey of roles played by electronic media in shaping culture. Media institutions are examined regarding information they distribute, entertainment they provide and influence they bring. Analysis of media sources, messages and audiences.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing.

For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: S

3 units

RTVF 129. Advanced Dramatic Writing

See TA 129.

Repeatable for credit

3 units

RTVF 134. Religion Film & Media

See RELS 134.

3 units

RTVF 141. Internet Production and Performance

See TA 141.

3 units

RTVF 142. Multimedia Production and Performance

See TA 142.

3 units

RTVF 150. KSJS Radio Programming and Production

Introduction to programming and fundamental techniques of audio production for KSJS-FM. Lab experiences in programming and production basics, including music and public affairs programming and production.

Prerequisite: RTVF 91.

3 units

RTVF 151. Lighting Techniques for Stage and Video

See TA 151.

3 units

RTVF 153. Costume for Stage and Video

See TA 153.

Repeatable for credit

3 units

RTVF 154. Scenery for Stage and Video

See TA 154.

3 units

RTVF 155. Advanced KSJS Programming and Production

Pre-professional course designed for students specifically interested in learning advanced concepts and techniques in programming and supportive audio production for radio using campus laboratory station KSJS. Variable topics.

Prerequisite: RTVF 150 or instructor consent.

Repeatable for credit

3 units

RTVF 158. Advanced Theatre Crafts

See TA 158.

Repeatable for credit

3 units

RTVF 163. Lighting Design for Stage and Video

See TA 163.

3 units

RTVF 164. Advanced Makeup for Stage and Video

See TA 164.

3 units

RTVF 166. Topics in Cinema Studies

Examines in depth varying selected topics in cinema history and criticism, according to a variety of aesthetic, cultural, thematic and methodological perspectives. Repeatable for credit when content changes.

Repeatable for credit

3 units

RTVF 170A. Acting and Directing for the Camera

Acting techniques, voice and microphone use, movement for camera, gesture and the frame, role analysis for non-sequential performance, concentration, relaxation. Preparation, performance and critique of taped scenes.

Prerequisite: RTVF 171 (directors) or DRAM 17 (actors).

Lecture 2 hours/activity 2 hours.

Repeatable for credit

3 units

RTVF 170B. Advanced Acting and Directing for the Camera

Using the grammar of film and narrative storytelling to direct, produce and write contemporary film and television scenes. Use of single- and multi-camera techniques.

Prerequisite: RTVF 170A or RTVF 172.

Lecture 2 hours/activity 2 hours.

Repeatable for credit

3 units

RTVF 171. Television Production

Basic approaches to tools and techniques of television production. Lab experience in studio production of television programs.

Prerequisite: RTVF 77 and RTVF 91.

Lecture 2 hours/activity 2 hours.

3 units

RTVF 172. Digital TV and Film Production

Creation, production and direction of short dramatic or informational television and film projects using digital video cameras and non-linear editing systems as used in commercial film and television.

Prerequisite: RTVF 171 (with grade of "C" or better).

Lecture 2 hours/activity 2 hours.

3 units

RTVF 173. Media Theory and Research

Theories of audience behavior and analysis of current social research on mass media. Emphasis on interplay between telecommunications media and interpersonal communication, especially uses and effects of media involving peer groups, minorities, children and families.

Prerequisite: RTVF 77 and RTVF 110.

3 units

RTVF 175. Film and Television Writing

Principles and practices in writing scripts for film and/or television.

Prerequisite: RTVF 77, RTVF 91 and TA 100W.

Repeatable for credit

3 units

RTVF 176. Television: Form, Content, Criticism

Analysis of television's programs, production elements and judgment criteria. Discussion and critique of television forms, including drama, documentary, variety, special events, sports, interviews and features.

Prerequisite: RTVF 77 and upper division standing.

Repeatable for credit

3 units

RTVF 177. Broadcast Management

Analysis of radio and television station organization, programming concepts, decision-making processes, finance, audience measurement and research techniques.

Prerequisite: RTVF 77 and RTVF 91.
3 units

RTVF 181. Modern Film

Viewing, study and discussion of important films produced since 1945. Major world movements and important directors in modern film. Repeatable once for credit on different topic with instructor consent.

Prerequisite: RTVF 82 and upper division standing.
Repeatable for credit
3 units

RTVF 182A. Film Production, Theory and Techniques

Principles, procedures and techniques of film production. Use of cameras, sound, lighting, pictorial composition, cinematic effects, color and editing.

Prerequisite: RTVF 82 and PHOT 40.
Lecture 2 hours/activity 2 hours.
3 units

RTVF 185. Special Topics in Radio, Television and Film

Variable topics in radio, television and film.
Repeatable for credit as topics change.

Prerequisite: Upper division standing and instructor consent.
See department office for specific information.
Repeatable for credit
3 units

RTVF 188. Alternative Cinema

Uses films from previously marginalized national cinemas from around the world as primary sources to teach students to appreciate, understand and compare diverse cultures.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

Repeatable for credit
GE: V
3 units

RTVF 190. Digital Video Post Production

Advanced editing and post production techniques applied to studio and field video production. Emphasis on computer-assisted editing.

Prerequisite: RTVF 171, RTVF 172 and instructor consent.
Lecture 2 hours/lab 3 hours.
3 units

RTVF 192. Radio, Television and Film Activity

Student participation in ongoing radio, television and film projects including KSJS-FM, Update News, comedy workshops and other activities supervised by area faculty. Repeatable, but up to 6 units may be used for graduation.

Prerequisite: Instructor consent.
Repeatable for credit
Credit / No Credit
1-3 units

RTVF 194. KSJS Station Operation

Structure and operation of non-commercial radio station KSJS-FM. Theory and practice of radio management, programming, production, public service, sales and engineering.

Prerequisite: Appointment to KSJS management staff or instructor consent.
Repeatable for credit
3 units

RTVF 198. Internship

See TA 198.

Repeatable for credit
Credit / No Credit
3 units

RTVF 199H. Honors Program

See TA 199H.

Repeatable for credit
Credit / No Credit
2-3 units

THEATRE ARTS**LOWER DIVISION****TA 005. Acting**

Basic acting class for non-theatre arts majors. Exploration of inner and external resources for performance, analysis of text and character, guidelines for successful rehearsal and performance. Learning to be seen, heard, understood and believed.

GE: C1
3 units

TA 010. Theatre Appreciation

Study of the historical and cultural contexts of theatre around the world. Seeing and critical writing about plays. Hands-on experiences in the arts and crafts of live theatre.

DRAM 18
GE: C1
3 units

TA 011. Script Analysis

Detailed analysis of dramatic and screenplay scripts related to performance and production.

3 units

TA 015. Voice and Diction

Voice production and articulation for the performer. Voice and speech improvement through guided exercises in posture/relaxation, respiration, phonation, resonance and articulation. Standard American diction taught through use of the International Phonetic Alphabet.

Lecture 2 hours/lab 3 hours.
CAN DRAM 6
3 units

TA 017. Intermediate Acting

Analysis, internal methods and characterization for playing scenes. Lab exercises in disciplined stage movement.

Prerequisite: TA 5 and TA 11 (can take TA 11 concurrently with TA 17).
Lecture 2 hours/lab 3 hours.
3 units

TA 048. Beyond Words: Getting Smarter Through Movement

Course focuses on using movement to understand the different stages of human life, in its biological and cultural configurations as well as the world around us. Movement shapes, unites and differentiates our preferences, communications and expressions.

GE: E
3 units

TA 051A. Scenery and Props for the Performing Arts

Introduction to facilities, materials and tools; safety guidelines for production shop and stage. Standard construction techniques and production vocabulary.

Activity 2 hours.
1 unit

TA 051B. Costume for the Performing Arts

Costume production laboratory introducing costume construction techniques and materials, basic alteration techniques, costume craft techniques; costume shop organization, management, personnel and equipment.

Activity 2 hours.
1 unit

TA 051C. Stage Management for the Performing Arts

Stage management practices including responsibility, communication, audition and rehearsal supervision, audience services coordination and working relationship with performance and production staff. Health and safety issues for performers and technical staff.

Activity 2 hours.
1 unit

TA 064. Makeup for Stage and Video

Makeup techniques for stage, television, film and print. Course covers makeup design, makeup materials and two dimensional application techniques. Laboratory work on actual stage productions, video and film shoots.

Lecture/demonstration 2 hours/lab 2 hours.
CAN DRAM 14
3 units

UPPER DIVISION**TA 100W. Writing Workshop: Theatre Arts**

Development of skills appropriate to the theatre profession: criticism, research, publicity and promotion materials, and cover letter and resume composition.

Prerequisite: ENGL 1B (with a grade of C or better); Completion of core GE, satisfaction of Writing Skills Test and upper division standing.
ABC/No Credit
GE: Z
3 units

TA 103. Musical Theatre

The repertoire of musical theatre with intensive training in appropriate acting, singing and dance techniques.

Prerequisite: Upper division standing.
Lecture 2 hours/lab 3 hours.
3 units

TA 105. Graphics for Stage and Video

Computer drafting, 3D modeling and rendering with emphasis on scenery and lighting for stage and video. CAD and photo editing programs will be used to create working drawings and renderings for theatrical settings. Targeted to art directors and theatrical designers.

Prerequisite: Upper division standing.
Lecture 2 hours/activity 3 hours.
3 units

TA 110. Advanced Acting

Preparation and presentation of roles to develop authority, characterization, range and clarity. Repeatable once with different instructor.

Prerequisite: TA 15, TA 5, TA 17 and instructor consent.
Lecture 2 hours/lab 3 hours.
Repeatable for credit
3 units

TA 112. Rehearsal and Performance

Analysis and production of a dramatic work that presents unusual problems of background, interpretation, style or meaning. Lectures, discussions, readings; rehearsal of play and participation in other aspects of the final production.

Prerequisite: TA 15, TA 5, TA 17 or instructor consent.

Lab hours required.

Repeatable for credit

3 units

TA 113. Acting Techniques and Professional Career Preparation

External techniques for playing a role and techniques for beginning a professional career in acting. Exercises in quick study, taking stage, resume/picture/portfolio selection, audition techniques, selecting an agent, finding work.

Prerequisite: TA 15, TA 5, TA 17 and instructor consent.

Lecture 2 hours/lab 3 hours.

3 units

TA 116. Directing

Study and discussion of and practice in the fundamental principles of play direction; stage composition, movement, business, tempo; directing procedures; play selection and interpretation; problems in styles, casting and rehearsal and performance.

Prerequisite: TA 11, TA 5 or TA 17; TA 105.

Lecture 2 hours/activity 2 hours.

3 units

TA 117. Practice in Acting or Directing

Director analyzes, casts, rehearses scenes. The actor performs in a variety of roles. Repeatable for credit when content changes.

Prerequisite: TA 17 or TA 16 and instructor consent.

Lecture 1 hour/activity 6 hours.

Repeatable for credit

3 units

TA 120. Theatre History

Examines the historical roots, many manifestations, and diversity of theatrical performances with particular attention to theatre's role within and between cultures. When content changes may be repeated.

Prerequisite: TA 011 or instructor consent.

Repeatable for credit

3 units

TA 121. Topics in Performance History

Examines relations between performance and unique historical/cultural conditions which motivate change or continuity in a specific area of performing arts. Not a historical survey, but a problem-centered course which focuses on developing the power to think historically about performance.

Prerequisite: TA 011 or instructor consent.

Repeatable for credit

3 units

TA 125. Advanced Voice Training

Training in vocal variety, flexibility, audibility and clarity for performers. Repeatable once for credit with a different instructor.

Prerequisite: TA 15 and instructor consent.

Lecture 2 hours/activity 2 hours.

Repeatable for credit

Credit / No Credit

3 units

TA 127. Contemporary Theatre

European and American playwrights from 1950 to the present and important theatre practices for this period.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing. For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: V

3 units

TA 128. Writing for the Stage

Writing in dramatic form: plot structure, characterization, content and theme. Analysis of plays. Exercises in writing.

Prerequisite: Upper division standing or instructor consent.

Repeatable for credit

3 units

TA 129. Advanced Dramatic Writing

Writing in dramatic form—plays, film scripts, television scripts. Study and discussion of models. Criticism of student writing.

Prerequisite: TA 128 or RTVF 175 (or equivalent) and instructor consent.

Repeatable for credit

3 units

TA 130. Broadcast Performance and Spoken Word

Performance class focuses on vocal techniques for broadcast, voice over and public performance of Spoken Word and Oral Interpretation.

Prerequisite: Upper division credit

3 units

TA 131. Storytelling and Creative Dramatics

Course focuses on Storytelling and Creative Dramatics to teach Multiple Subject Credential Students theatre techniques.

Prerequisite: Upper division standing.

3 units

TA 141. Internet Production and Performance

This course focuses on the production (HTML, digitizing audio/video) and analysis of performance content on the World Wide Web.

Prerequisite: Basic computer skills (file management, word processing); RTVF 91, DRAM 131 or equivalent; and instructor consent.

Lecture 1 hour/activity 6 hours.

3 units

TA 142. Multimedia Production and Performance

Features tools (Macromedia Director) and techniques for high-bandwidth disk-based multimedia production and performance.

Prerequisite: RTVF 91, DRAM 131 or equivalent basic computer skills; and instructor consent.

3 units

TA 144. Shakespeare I

See ENGL 144.

3 units

TA 145. Shakespeare and Performance

See ENGL 145.

Repeatable for credit

3 units

TA 148. The Art of Movement

Explores the expressive, restorative and communicative nature of movement as applied to human performance, the arts, therapy, education and management.

Prerequisite: TA 015 or instructor consent.

Lecture 2 hours/lab 3 hours.

3 units

TA 151. Lighting Techniques for Stage and Video

Fundamentals of fixtures, distribution, control, color/diffusion media and systems for lighting stages, video studios, sound stages and locations. Portable and permanent installations examined. Emphasis on state of the art technology. Laboratory work on actual stage presentations, video productions and film shoots.

Prerequisite: Upper division standing.

3 units

TA 152A. English Drama to 1642

See ENGL 152A.

3 units

TA 152B. English Drama from 1660

See ENGL 152B.

3 units

TA 153. Costume for Stage and Video

Intermediate construction of stage and screen costumes. Introduction to the design process. Emphasis on history of costume as it pertains to costume design and construction. Laboratory work on actual stage, video and film shoots.

Prerequisite: TA 51B or instructor consent.

Lecture 2 hours/Activity 2 hours.

Repeatable for credit

3 units

TA 154. Scenery for Stage and Video

Advanced construction techniques and stage machinery design for stage and studio.

Prerequisite: TA 51A.

3 units

TA 158. Advanced Theatre Crafts

Advanced theatre crafts and the technology for their execution. Topics include costume, makeup, scenery, properties, sound and special effects. Major emphasis on tools, techniques, equipment, health and safety considerations and interpretation of designer's graphics.

Prerequisite: Upper division standing.

Lecture 2 hours/lab 2 hours.

Repeatable for credit

3 units

TA 161. Theatre Design Topics

Discussion of theatre design including scenic, property, costume, makeup, lighting, sound and facility design. Subject matter varies depending on specialty of faculty.

Prerequisite: TA 105 and upper division standing.

Lecture 2 hours/activity 2 hours.

Repeatable for credit

3 units

TA 163. Lighting Design for Stage and Video

Design, organization, graphic representation of lighting for stage, video and film production. Laboratory work on actual stage presentations, video productions and film shoots. Venues include performing arts stages, video studios and sound stages along with shooting on location.

Prerequisite: Upper division standing.

3 units

TA 164. Advanced Makeup for Stage and Video

Two and three-dimensional makeup techniques. Direct application of three-dimensional materials, life mask casting, design and construction of prostheses, wig and facial hair ventilation.

Prerequisite: TA 064 or instructor consent.

Lecture 2 hours/activity 2 hours.

3 units

TA 167. Children's Theatre

Materials, problems and techniques of producing formal drama with and for children at the school, community and professional levels.

Prerequisite: Upper division standing.

3 units

TA 168. Arts Management

Planning, communication, organizational structure and supervision as applied to performing arts management, audience development, programming, fiscal control, personnel, publicity, promotion, and public relations.

Prerequisite: Upper division standing.

Offered Summer only.

3 units

TA 172. The Arts in U.S. Society

See CA 172.

GE: S

3 units

TA 173. Thinking About Contemporary World Arts

See CA 173.

GE: V

3 units

TA 180. Individual Studies

Directed study in specified fields not covered by offered courses.

Prerequisite: Department chair consent.

Repeatable for credit

Credit / No Credit

1-3 units

TA 190. Activity Projects in Acting

Acting in the regularly-scheduled production of plays.

Prerequisite: Audition and instructor consent.

Repeatable for credit

2-3 units

TA 191. Activity Projects in Theatre Production

Supervised activity with individual instruction in staging, lighting, sound, properties, costuming and makeup for regularly-scheduled production of plays.

Prerequisite: Instructor consent.

Repeatable for credit

1-3 units

TA 195. Activity Projects in Arts Management

Supervised activity with individual instruction in house management, ticket sales, publicity, promotion and public relations in connection with the department's productions in drama and dance.

Prerequisite: Instructor consent and upper division standing.

Repeatable for credit

3 units

TA 198. Internship

Supervised internships with approved radio, television or theatre organizations. Written evaluation submitted by sponsor and student after field work. Repeatable for credit up to 9 units.

Prerequisite: Junior or senior standing and instructor consent.

Repeatable for credit

Credit / No Credit

3 units

TA 199H. Honors Program

Demanding project demonstrating student's ability to do independent action and research. Written thesis or, in the case of the creative project, analysis and evaluation of the aesthetic problem; thesis to be defended orally by the student before a theatre arts staff committee. May be repeated once for credit.

Prerequisite: Senior standing/3.0 GPA; by invitation only.

Repeatable for credit

Credit / No Credit

2-3 units

GRADUATE**TA 200. Graduate Research in Theatre Arts**

Graduate study in theatre arts, bibliography, methods of investigation and reporting techniques applicable. Reading and research.

Prerequisite: Acceptance to MA program or instructor consent.

3 units

TA 201. Theoretical Perspectives in the Performing Arts

Analysis and exploration of significant theories defining the values ascribed to the performing arts in different media. Emphasis on conditions for establishing credibility of a theory and on intercultural, interdisciplinary applicability of theories. Course may be repeatable when content changes.

Repeatable for credit

3 units

TA 220. Seminar in Performance Cultures

Special investigation into how performance in different media constructs cultural identity and difference, including issues related to gender representation, cultural appropriation and audience market formation. Course may be repeatable when content changes.

Prerequisite: Instructor consent.

Repeatable for credit

3 units

TA 221. Seminar in History of the Performing Arts

Focus on a problem related to conditions of change in different performance media in different cultures and historical eras. Course may be repeatable when content changes.

Prerequisite: Instructor consent.

Repeatable for credit

3 units

TA 225. Seminar in Shakespeare

See ENGL 225.

Repeatable for credit

3 units

TA 226. Seminar in Tragedy

See ENGL 226.

Repeatable for credit

3 units

TA 241. Seminar in Dance of the Twentieth Century

Concepts, styles and forms of the dance in this century. Study and investigation of significant trends, theories and artistic philosophies of the major dance movements: ballet, modern dance, non-narrative, "avant-garde" and "non-dance."

3 units

TA 242. Seminar in Performance Audiences

Specific attention is given to audiences. Varying methodologies are applied to audience reception and meaning making in different performance settings, especially film, television, radio, theatre, and multimedia venues. Course may be repeatable when content changes.

Repeatable for credit

3 units

TA 260. Graduate Problems in Theatre Arts

Problems in selected theatre area.

Prerequisite: Classified graduate standing in theatre arts and instructor consent.

Repeatable for credit

2 units

TA 270. Seminar in Radio-Television or Film

Investigation of the literature of radio and television or film including the history and development, government and self-regulation in broadcasting or film and the use of media for commercial, artistic and educational purposes.

Prerequisite: Instructor consent.

3 units

TA 275. Graduate Scriptwriting Seminar

Advanced study and practice of narrative script writing.

Prerequisite: Graduate standing or completion of DRAM 129 and instructor consent.

Repeatable for credit

3 units

TA 298. Special Study

Supervised research or creative project in a specific field of theatre. Written report.

Prerequisite: Department chair consent.

Repeatable for credit

Credit / No Credit

1-3 units

TA 299. Master's Thesis

Supervised thesis in theatre, television, radio, film or dance.

Prerequisite: Admission to candidacy for the master's degree and approval of the graduate committee.

Repeatable for credit

Credit/No Credit/Report in Progress

1-4 units

Undergraduate Studies

Curricula

- Minor, Community Service Learning

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
<i>EDUC 157 may be taken under the following prefixes: COMM, ENGR, HA, SCI, or APSC.</i>	
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

Courses

UNIVERSITY STUDIES

LOWER DIVISION

UNVS 010. First Year Seminar

An introduction for first year students to the demands and opportunities of the college experience. Students will learn the social, academic, and cultural resources within the university. Some topics explored will be study skills, diversity, adjusting to college, and community involvement.

3 units

UNVS 057. Community Involvement and Personal Growth

See SOCI 057.

GE: E
3 units

UNVS 090. Leadership in Residential Life

Class is designed for students selected by University Housing Services to serve as leaders in the residence halls. Students will receive an introduction to residential education, student development theory, conflict mediation, community development, and leadership as well as training in university policies and procedures. Classroom learning will be integrated with on the job experience.

Perequisite: Current application or employment with University Housing Services.
ABC/No Credit
3 units

UNVS 095. Academic Success

Course enhances student success in college through basic and leadership skills development, pertinent academic information and strategies for achieving personal and academic goals. Students will lead themselves through the educational process rather than be led by institutional bureaucracy.

1-3 units

UNVS 095A. Service Learning for Academic Leaders

Course enhances student success in college through basic and leadership skills development, pertinent academic information, and strategies for achieving personal and academic goals.

2 units

UNVS 096E. Emerging leaders

Repeatable for credit
3 units

UPPER DIVISION

UNVS 120. Peer Mentor

Seminar course intended to provide the knowledge and skills necessary to be an effective Peer Mentor who will work in the new student seminars and in the Peer Mentor Center at San Jose State University.

Perequisite: Must apply and be accepted.
3 units

UNVS 125M. McNair Research Colloquium

Course is designed to assist students in the SJSU McNair Scholars Program to prepare for graduate study at the doctoral level. Various faculty will lecture on topics including research methodology, research writing, protocol for presenting research results conferences, graduate school experiences and academic expectations.

Perequisite: Students must be accepted in the SJSU McNair Scholars Program.
Repeatable for credit
Credit / No Credit
3 units

UNVS 190. University Internship

Supervised placement in student support services for advanced students.

Repeatable for credit
Credit / No Credit
1-4 units

UNVS 199. Orientation Leadership Studies

This class is designed for students selected by Student Life Center to serve as SJSU Orientation Leaders. Students will learn theoretical/practical aspects of leadership, and receive training in university policies/procedures. Curriculum will apply to students' leadership experiences.

Perequisite: Apply and be selected (fall semester), 2.0 G.P.A., upper division standing or instructor consent.
Repeatable for credit
3 units

Urban and Regional Planning

College of Social Sciences

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408-924-5882
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Professors

Earl G. Bossard
Dayana Salazar, Chair

Assistant Professors

Asha Weinstein Agrawal
Shishir Mathur
Hilary Nixon

Curricula

- Minor, Urban Studies
- Certificate, Transportation Planning Management
- Certificate, Urban Planning Management
- MUP, Master of Urban Planning

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 coursework, 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, two 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	3
URBP 101		
Department Electives9
Complete nine units from:	URBP 110, 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)	
Other Elective3
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)		
Total Units Required	15

Certificates

The department offers two graduate certificate programs: Transportation Planning Management and Urban Planning Management.

The purpose of the fifteen-unit graduate certificate program in Transportation Planning Management is to produce entry-level planners who have both an understanding of the special transportation needs of disadvantaged minority communities and the professional skills to help meet those needs.

The fifteen-unit graduate certificate program in Urban Planning Management provides students with background in a specialization in Community Design and Development, Environmental Planning, Transportation and Land Use, or Applications of Technology in Planning. In addition some credits granted in the certificate program can be applied to the Master of Urban Planning Degree.

For detailed information on these programs, contact the department's Graduate 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, and 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 such background courses during the period of study, this 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

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	18
URBP 200, URBP 204A, URBP 204B, URBP 225, URBP 229 and URBP 236	
Core Laboratory and Fieldwork Courses	9
URBP 201 and URBP 213	
Electives	12
<i>Four electives chosen from Urban and Regional Planning specializations.</i>	
Community Design and Development	
URBP 145, 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 185, URBP 227, URBP 240, URBP 255, URBP 256, URBP 260, URBP 275, URBP 278	
Transportation and Land Use	
URBP 211, URBP 220, URBP 226, URBP 255, URBP 250, URBP 256, URBP 275, URBP 278	
Applications of Technology in Planning	
URBP 148, URBP 248, URBP 276, URBP 278, URBP 279, GEOG 170, GEOG 172, GEOG 175	
Elective	3
One additional elective chosen from the above list or another class with approval of the Graduate Advisor	
Thesis, Project or Planning Report	6
URBP 299 (Plan A) or URBP 298A and URBP 298B (Plan B)	
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.

Courses

URBAN PLANNING

UPPER DIVISION

URBP 101. The City

History and organization of the city, emphasizing contemporary issues and strategies for influencing urban policy.

Prerequisite: Completion of core GE, satisfaction of Writing Skills Test and upper division standing.

For students who begin continuous enrollment at a CCC or a CSU in Fall 2005 or later, completion of, or corequisite in a 100W course is required.

GE: S
3 units

URBP 103. Local Government and Politics

See POLS 103.

3 units

URBP 110. Introduction to Metropolitan Problems

Suburban growth that has dominated the expansion of metropolitan America since 1945. Urbanization of the suburbs in terms of its past, present and future implications.

Prerequisite: Upper division standing.
Offered only occasionally.
Repeatable for credit
3 units

URBP 111. Urbanization in Developing Countries

Review and analysis of the effect of global economic restructuring on the spatial configuration of less industrialized third world countries, and comparison of metropolitan regions across the globe facing deterioration of environmental conditions, housing shortage, industrial restructuring, and suburban growth.

Prerequisite: Upper division standing.
3 units

URBP 120. Introduction to Housing

Historic and policy aspects of housing, focusing on housing characteristics and public sector intervention. Topics may vary.

Prerequisite: Lower division social science course.
Offered only occasionally.
Repeatable for credit
3 units

URBP 123. Historic Preservation and Neighborhood Revival

Preservation and its relationship to housing and neighborhood issues. Includes landmark law, neighborhood change, restoration, adaptive reuse, public and private programs, fiscal incentives and housing market impacts.

Prerequisite: Upper division standing.
Repeatable for credit
3 units

URBP 124. Urban Systems

Social, economic, political and physical aspects of cities as partial and total systems. Such systems as land use and transportation examined.

Prerequisite: Upper division standing.
Repeatable for credit
3 units

URBP 125. Urban Anthropology

See ANTH 125.

3 units

URBP 126. Introduction to Urban Form in the Third World

The form and development of cities in developing countries. Historical precedents of pre-industrial and colonial urban form. Response of national independence to the spatial structure of underdevelopment.

Prerequisite: Upper division standing.
3 units

URBP 127. Urban Native American Issues

Factors of acculturation, integration and organization that have taken place among contemporary urban Native Americans since leaving the reservation for the city.

Prerequisite: ENGL 1A and upper division standing.
Repeatable for credit
3 units

URBP 132. Creating Built Worlds

See ANTH 132.
3 units

URBP 133. Introduction to Social Planning

Contemporary social issues related to urban and regional planning. Assessment of community social needs and resident planning. Focus on ethnic areas such as African, Asian and Mexican American neighborhoods.

Prerequisite: Upper division standing.
3 units

URBP 134. Topics in Historic Preservation

Advanced-level work in historical preservation. Requires completion of semester project such as research paper, a preservation survey, a National Register nomination or an internship with a local agency or museum.

Prerequisite: URBP 123.
Repeatable for credit
3 units

URBP 136. Introduction to Land Use and Facilities Planning

Land use and facilities planning practices in the context of American cities, emphasizing interrelationships between various land uses and public facilities and service requirements.

Prerequisite: Upper division standing.
3 units

URBP 142. Introduction to Environmental Planning

Environmental sustainability and its application to local planning. Review of regulatory tools and legislation that underlie most environmental planning and current environmental planning topics.

Prerequisite: Upper division standing.
Repeatable for credit
3 units

URBP 143. Business Management and Urban Planning Topics

In-depth examination of selected topics involving the application of business organization and management approaches to urban planning problems.

Prerequisite: Upper division standing or instructor consent.
Repeatable for credit
3 units

URBP 145. Urban Policy and Its Impact on Inner City Residents

Effects of public policy decisions on inner city populations. Implications of urban planning processes for differential consumption costs of public goods and services.

Prerequisite: Upper division standing.
3 units

URBP 148. Computers in Urban Design

Examination of computer-aided graphics and three-dimensional visualization processes applied to urban design and planning.

Prerequisite: Upper division standing or instructor consent.
3 units

URBP 151. Introduction to Urban Design

Principles, goals and methods of the urban design process. Urban design as the comprehensive treatment of the human-made environment.

Prerequisite: Upper division standing or instructor consent.
3 units

URBP 152. Introduction to Urban Design Studio

Introduction to the analysis of alternative urban design policies to direct urban form development. Course may be repeated for credit when topic changes.

Prerequisite: URBP 151 or instructor consent.
Activity 6 hours.
Repeatable for credit
3 units

URBP 169. Introduction to Computers in Planning

Introduction to selected computer planning topics including spreadsheet and database models and geographic information system.

Prerequisite: Instructor consent.
Repeatable for credit
3 units

URBP 175. Urban Studies Topics

In depth examination of selected topics. Consult schedule of classes for current offerings. Course may be repeatable for credit with different topic.

Prerequisite: Instructor consent.
Repeatable for credit
3 units

URBP 178. Introduction to Transportation and Urban Planning

Overview of urban transportation as a social essential. Technical, operational, social, environmental, land use, economic and fiscal aspects of urban transportation systems of all modes.

Prerequisite: Upper division standing.
Repeatable for credit
3 units

URBP 179. Urban Geographic Information Systems

Exploration of geographic information systems (GIS) area analysis techniques for spatial information management in local government: planning support systems, needs analysis, envisioning neighborhoods utilizing multiple maps, charts, photos and the Internet.

Prerequisite: GEOG 170 or instructor consent.
Repeatable for credit
3 units

URBP 180. Individual Studies

Individual work on special topics by arrangement.

Prerequisite: Instructor consent and department chair approval.

Repeatable for credit
Credit / No Credit
1-4 units

URBP 184. Directed Reading

Directed reading on a specific urban studies topic.

Prerequisite: Instructor consent and department chair approval.
Repeatable for credit
Credit / No Credit
1-4 units

URBP 185. Environmental Impact Analysis

See ENVS 185.

4 units

GRADUATE

URBP 200. Seminar on Urban and Regional Planning

Overview of the historical development of urban and regional planning in the United States, as well as prominent theories of urban planning practice. Emphasizing the connection between the theoretical and historical material and current planning practice.

Prerequisite: Passage of Writing Skills Test
3 units

URBP 201. Community Assessment.

Through fieldwork and laboratory assignments, the student applies theories and techniques of analysis to identify the assets, problems, and opportunities of an urban community.

Prerequisite: Instructor consent.
6 units

URBP 203. Collaborative Neighborhood Planning

Through fieldwork and laboratory assignments, the student applies community-based participatory planning methods to develop recommendations for improving neighborhood quality of life through planning and design.

Prerequisite: URBP 201 or instructor consent.
3 units

URBP 204A. Quantitative Methods I: Data Collection and Analysis

Urban research design, measurement, selected statistical research tools and introduction to computer processing. Extensive treatment of survey research.

3 units

URBP 204B. Quantitative Methods II: Modeling

The modeling of basic social, economic and physical data required for urban and regional planning. Topics include economic base analysis, input-output analysis, housing market analysis, population analysis, fiscal impact analysis, and transportation-land use models.

Prerequisite: URBP 204A.
3 units

URBP 211. Regional Analysis and Planning

Students learn the major concepts and techniques of regional analysis and apply these to assess and solve current planning problems.

Prerequisite: Instructor consent.
3 units

URBP 213. Communication Skills for Planners

Advanced techniques for communicating clearly, persuasively, and professionally in a city and regional planning context. Covers writing and public speaking.

Prerequisite: Instructor consent.
3 units

URBP 214. Public Management

See PADM 214.

Repeatable for credit
3 units

URBP 220. Economic Analysis for Urban Planning

Application of economic theory to urban planning including utility theory, area supply and demand functions and spatial monopoly, rent theory with emphasis on urban land as a factor of production; agglomeration and deglomeration effects and economics of scale, community welfare and cost-benefit analysis, economic base analysis.

3 units

URBP 223A. Housing I

Overview of the housing situation in the United States; examination of the theory of housing markets and framework for analyzing housing policies; in-depth study of the problem of affordable housing and critical examination of the steps that the public, private, and non-profit sectors have taken to alleviate the problem.

3 units

URBP 223B. Housing II

U.S. housing policy and the effects of recent challenges to the New Deal and federal initiatives prior to 1980, new market-based approaches and the role of state and local government in increasing housing supply.

3 units

URBP 225. Land Use and Urban Planning

Study of the methods by which local, state and federal governments control the use of land. Examination of contemporary growth and land use management techniques, as well as the review of related capital facilities and service planning.

3 units

URBP 226. Regional Transportation Planning

Overview of the evolution of key transportation institutions and policies at the metropolitan, state, and federal levels. Assessment of the current challenges facing regional transportation systems and evaluation of different planning and policy approaches proposed to improve the performance of regional transportation systems.

Prerequisite: Instructor consent.

3 units

URBP 227. Resource Development Planning

The law or resource use and development, its administration and underlying policies; ecological impact of economic growth, population change and physical development in relation to comprehensive planning for urban and regional areas.

3 units

URBP 228. Urban Community Development

The role, objectives and policies of the urban community development process; the social, economic, political and physical implications underlying community development programs; and relationships of these programs to comprehensive urban planning.

3 units

URBP 229. Planning and Environmental Law

The role of public law in meeting problems of urban growth and environmental change; legal aspects of preparing and administering planning controls and incentives; the law of real property with respect to the planning process.

3 units

URBP 231. Urban Design in Planning

Urban design as part of the planning process; contemporary and historic urban design thought and ways of improving design quality in the urban environment.

3 units

URBP 232. Urban Design Studio

Discussion and analysis of urban design policies to direct urban form development. Review of historical evolution of urban form. Zoning regulation of building height, bulk and density and building-street interdependence. Field studies of local application of urban form controls.

3 units

URBP 233. Social Issues in Planning

Multi-disciplinary study of the principles that guide the growth of a community so all members have equal access to the benefits of living in an urban environment. The course examines the coordination of citizen groups and government bodies to secure needed social services and facilities, champion initiatives that improve quality of life in our community, and engage issues important to underrepresented groups.

3 units

URBP 234. Field Study Seminar

Discussion and analysis of experience in the planning field under internship programs. May not be counted towards the Master of Urban Planning program of study. Repeatable for credit with approval of the Graduate Student Advisor.

Prerequisites: Instructor consent and enrollment in the Master of Urban Planning degree program.

Repeatable for credit

1 unit

URBP 236. Urban and Regional Development Policy Analysis

Analytical, historical and cross-cultural approaches to explain and evaluate the public policy making process with particular reference to urban and regional planning and development.

Prerequisites: Passage of the Writing Skills Test.

3 units

URBP 240. Environmental Planning

Examination of the fundamental concepts and issues related to urban environment that planners face. Focus on land use and open space planning, planning and use of urban resources, interactions of urban residents and the physical environment, and the role of government in formulating appropriate policies and strategies.

3 units

URBP 248. Advanced Computers in Urban Design

Examination of computer-aided graphics and three-dimensional visualization processes applied to urban design and planning.

3 units

URBP 250. Urban Planning Public Finance

An investigation of both the theory and practice of local public finance with emphasis on applications relevant to urban and regional planning. Topics include: public goals and externalities; the function of the budget; sources of revenue and expenditure; the planning programming-budgetary system (PPBS); methods of project evaluation; and traditional as well as innovative methods of public finance including property tax, user fee, impact fee, tax increment financing and use of special districts.

3 units

URBP 255. Urban Growth Management

Extensive study of causes, consequences and costs of sprawl; study of growth management and smart growth programs at the state, regional and local level, including the rationale, techniques, and economic, political, and organizational implications.

3 units

URBP 256. Transportation Planning: Local Issues

Examination of transportation planning issues addressed at the neighborhood and municipal level. Not to substitute for transportation engineering. Course may be repeated for credit when topic changes.

Repeatable for credit

3 units

URBP 260. Environmental Planning Topics

In-depth examination of selected topics specifically related to environmental planning. Consult department for current offerings. Course may be repeated for credit when topic changes.

Repeatable for credit

3 units

URBP 275. Urban Planning Topics

In-depth examination of selected topics introduced in the core seminars for the Master of Urban Planning degree. Consult schedule of classes for current offerings. Course may be repeated for credit when topic changes.

Repeatable for credit

3 units

URBP 275A. Urban Planning Practice

Study of how the planning process guides and shapes cities. How the long-range planning documents interact with the review process for development.

Repeatable for credit

3 units

URBP 275D. Seminar in Real Estate and Urban Planning

The relationship between the public and private sectors in the field of urban development with emphasis on growth and regulation, finance, urban redevelopment and market behavior.

3 units

URBP 275E. Historic Preservation Planning

Survey of the growth of historic preservation in the United States. Identification of preservation techniques, and federal, state and private preservation agencies and legislation; value and objectives of preservation. Particular emphasis is given to the use of historic preservation planning as a strategy for community revitalization. Components of a preservation plan to be reviewed include history, urban design, architecture, economics, implementation, and preservation law and public policy.

3 units

URBP 275F. Private Development and Urban Planning

Study of the entire process of private development from preliminary product analysis through planning, construction and marketing.

3 units

URBP 276. Computers in Planning Topics

Examination of selected computers in planning topics including spreadsheet and database models, geographic information systems and desktop publishing. Course may be repeated for credit when topic changes.

Repeatable for credit

3 units

URBP 278. Geographic Information Systems Planning Applications

Examination of geographic information systems (GIS) applications to urban and regional planning topics. Course may be repeated for credit when topic changes.

Repeatable for credit

3 units

URBP 279. Advanced GIS Planning Applications

Further examination of advanced geographic information systems (GIS) applications to urban and regional planning topics

Prerequisite: URBP 278 or instructor consent.

3 units

URBP 280. Planning Research Topics

In-depth examination of selected planning research topics introduced in core seminars for the Master of Urban Planning degree, such as the social and environmental impacts of planning policies.

Repeatable for credit

3 units

**URBP 298A. Special Study:
Planning Report Development**

Advanced research and report writing. Students develop a plan and complete the initial research to write a planning report that demonstrates their capacity to do independent research, analysis, and writing about a complex planning problem.

Prerequisite: Passage of the Writing Skills Test, instructor consent and Graduate Student Advisor approval.

Credit / No Credit

3 units

**URBP 298B. Special Study:
Report Completion**

Advanced individual research and report writing. Students work with a faculty advisor to complete a professional planning report that demonstrates their capacity to do independent research, analysis, and writing about a complex planning problem.

Prerequisite: Passage of 298A, instructor permission, and approval of the Graduate Student Advisor.

Credit / No Credit

3 units

URBP 299. Master's Thesis or Project

The original investigation of a planning problem through independent research or the presentation of an original planning project. The student chooses the problem with the final approval of the department chair.

Prerequisite: Passage of the Writing Skills Test, instructor consent and department chair approval.

Repeatable for credit

Credit/No Credit/Report in Progress

3-6 units

Values, Technology and Society Program

Interdisciplinary

Faculty Office Building 234
408-924-4526

Curricula

- 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.

Minor – Values Technology and Society

	Semester Units
Core	9
PHIL 110 (3), ENVS 001 or TECH 198 (3) and GEOL 111 (3)	
Electives	9
<i>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.</i>	
Complete three courses from: ANTH 115, ANTH 146, BIOL 110, ENVS 117, HPRF 135, HIST 142, METR 112, PHIL 115, PHIL 186, RELS 122, RELS 162, RELS 194, RTVF 110 (or equivalent on approval)	
Total Units Required	18

Policies and Procedures

Academic Regulations
Admission – Procedures and Policies
Admission – Undergraduate
Alternative Enrollment Programs
Advising and Orientation
Degree Requirements – Undergraduate
Graduation - Undergraduate Degree
Graduate and Postbaccalaureate Information
Fees and Financial Assistance
Leave of Absence and Withdrawal
Readmission
Registration
Residency
Student Rights

Teaching: How to Become a Teacher in California

The California State University

Officers and Administrators

Faculty

Emeritus Faculty

Academic Regulations

Classification of Students

San José State University students are classified in the lower or upper division or in graduate standing based on the units completed. The basis of classification is as follows.

Lower Division

Freshmen are those who have earned a total of fewer than 30 semester units. Sophomores are those who have earned a total of 30 through 59 semester units.

Upper Division

Juniors are those who have earned from 60 through 89 semester units. Seniors are those who have earned 90 semester units or more. Second or Postbaccalaureate students are those possessing a recognized baccalaureate degree and enrolled in an undergraduate degree program.

Graduate Standing

Graduate standing is the classification for those who possess a recognized baccalaureate degree and are enrolled in graduate studies or in school credential programs.

Undeclared Category

The university accepts lower and upper division students who are not ready to declare a major academic objective into the undeclared category.

Students selecting the undeclared category for admission must declare a degree major objective prior to applying for graduation. Students must obtain prior approval from the department in which they ultimately choose to major in accordance with university regulations.

Students who are in doubt about their degree program are encouraged to seek assistance in the Student Services Center.

Trained counselors are also available in Counseling Services and in the Career Center. Students will be assisted on an individual basis with the appropriate use of vocational testing when necessary.

Undeclared students should report to the Student Services Center for General Education and other academic advisement.

Course Numbering System

Course Numbers

Lower division (freshman and sophomore) courses are numbered 1-99 and cannot be used for credit in graduate or credential programs; upper division (junior and senior) courses are numbered 100-199; graduate courses are numbered 200-299.

Methods or professional courses given by or for other departments are allowed upper division credit and are numbered 300-399.

180, 184, 96, 196 and 296 Courses

Individual Studies (180) and Directed Reading (184) are used for independent study and are generally reserved for majors within a department. Normally, no more than four units of 180 and/or 184 may be taken for baccalaureate credit (see Unit Requirements). Courses numbered 96, 196 and 296 are offered to meet special demands for experimental courses on a temporary basis and are listed in the SJSU Schedule of Classes, but not in this catalog.

400-499 Continuing Education Units

Courses in the 400-series are especially designed for professional in-service and relicensure purposes. Continuing Education Units (CEU) are given for these courses. Courses are not applicable to degree programs and units earned do not affect grade point totals or average.

Disregard of Previous Semesters' Work

In accordance with Executive Order 213, Academic Renewal, undergraduate students may petition for removal of previous term(s) work from degree consideration.

SJSU may disregard up to two semesters of course work when such action will permit the student to graduate with a baccalaureate degree without further matriculation.

To disregard up to two semesters of previous undergraduate work associated with the baccalaureate degree the student must furnish evidence that:

- The student has applied for graduation.
- The work completed in the term(s) under consideration is substandard and not representative of present scholastic ability and level of performance.
- Five years have elapsed since the most recent work to be disregarded was completed.
- There were extenuating circumstances which affected the level of performance.
- The student's GPA (overall SJSU, Overall, Major, or minor) is currently below a 2.0 and it would be necessary to complete additional units and enroll for one or more additional terms in order to raise the GPA sufficiently to qualify for the baccalaureate degree if the petition is not approved.
- The student has earned at least a 3.0 GPA in the recent 15 units at SJSU, or 2.5 in the past 30 units, or 2.0 in the past 45 units. Work completed at another institution cannot be used to satisfy this requirement.

Petition forms and specific details on the procedures to be followed are available at the Student Services Center and online at www.sjsu.edu/registrar/forms.

Grades

Grading System

A, B, C, D, F Letter Grades

The grading policy of SJSU provides that A, B, C, D, F, shall be the basic grading system and shall apply to all course work acceptable toward a degree program except for those courses in which it is mandatory or permissible that Credit/No Credit grades be used.

A+	A.....	4.0
A-	A.....	3.7
B+	B.....	3.3
B	B.....	3.0
B-	B.....	2.7
C+	C.....	2.3
C	C.....	2.0
C-	C.....	1.7
D+	D.....	1.3
D	D.....	1.0
D-	D.....	0.7
F	F.....	0.0
WU	WU.....	0.0

"A,B,C/No Credit" shall be used in English 1A, 1B and Junior level Writing Workshops (100W).

"AU" – Auditing a Class

Enrollment as an auditor is subject to the permission of the instructor provided that enrollment in a course as an auditor shall be permitted only after students otherwise eligible to enroll on a credit basis have had an opportunity to do so. **Auditors are subject to the same fee structure as credit students and regular class attendance is expected.**

Once enrolled as an auditor, a student may not change to credit status unless such a change is requested no later than the last day to add classes. Auditors must be officially registered in the course before choosing the audit grade option. Eligible students may choose this option by turning in the audit form available at the Student Services Center prior to the last day to add during the late registration period.

Credit/No Credit (CR/NC) Grades: Elective

An upper-division (Junior or Senior) student shall have the option of taking a maximum of 12 semester units as long as the units are not in the major or minor, or in support of, preparation for or prerequisite to the major or minor, or for General Education on the basis of Credit/No Credit for courses under the basic letter grade system. Eligible students may choose this option by turning in the CR/NC Option form, available at www.sjsu.edu/registrar/forms, by the add deadline. Students may accumulate a maximum of 60 semester units of Credit/No Credit grades toward a baccalaureate degree.

In addition to turning in the CR/NC Option form, you must have officially added the class.

CAUTION:

Credit = A, A-, B+, B, B-, C+, C;
No Credit = C-, D+, D, D-, F, WU.

Credit/No Credit (CR/NC) Grades:**Mandatory**

"CR/NC" grades are mandatory for thesis and normally used in projects, field work, internships, individual studies, or directed reading. As recommended by departments and approved by the College Dean, credit/no credit grades may be used in activity and laboratory courses, workshops, and selected seminars (colloquia). Students may accumulate a maximum of 60 semester units of Credit/No Credit grades toward a baccalaureate degree. A maximum of 40 percent of the units required in a graduate degree can be credit/no credit (e.g., 12 units in a 30 unit program).

"I" (Incomplete) Grades

The symbol "I" (Incomplete Authorized) indicates that a portion of required course work has not been completed and evaluated in the prescribed time period due to unforeseen, but fully justified, reasons and that there is still a possibility of earning credit. The student **should not** re-enroll in the course. It is the responsibility of the student to bring pertinent information to the instructor and to reach agreement on the means by which the remaining course requirements will be satisfied. A final grade is assigned when the work agreed upon has been completed and evaluated.

The thirteenth week of instruction is the beginning date for instructors to give "Incomplete," if the student qualifies. An incomplete cannot be assigned when it is necessary for the student to attend a major portion of the class when it is next offered. Further, an incomplete is prohibited in those cases where the normal practice requires extension of course requirements beyond the close of a term, e.g., thesis or project type courses. In such cases use of the "RP" symbol is required. An incomplete can be cleared even though the student is not in attendance.

An incomplete must be made up within one calendar year immediately following the end of the term in which it was assigned. This limitation prevails whether or not the student maintains continuous enrollment. Failure to complete the assigned work will result in an incomplete "I" being converted to an "IC" (failing grade for grade point average computation), or an "NC" for non-traditionally graded courses. "IC" grades will affect the grade point average, unless the faculty member assigns a specific letter grade at the time the Incomplete is assigned, which would replace the "I" in the student's record at the end of the calendar year deadline. "NC" grades do not affect the grade point average. The incomplete cannot be removed on the basis of work taken at another institution nor by re-enrolling in the course. Petitions for a maximum one-year extension of time to clear incompletes are available in the Student Services Center or at www.sjsu.edu/registrar/forms/, and must be submitted prior to the end of the semester the incomplete was due to be cleared.

"IC" (Incomplete Charged)

Failure to complete the assigned work within the established calendar year period for an "I" grade will result in an automatic grade change to an "IC" grade which calculates as an "F" grade.

"RP" (Report in Progress)

The "RP" symbol is used in connection with courses that extend beyond one academic term. The symbol indicates that work in progress has been evaluated as satisfactory to date, but that the assignment of a final grade must await the completion of additional course work. Cumulative enrollment in units attempted may not exceed the total number applicable to the student's educational objective. For example, a student who has four units of 299, Master's Thesis, on the Approved Program may not enroll for more than a total of four units of 299.

All work is to be completed within one calendar year of the date of first enrollment except for graduate degree project and thesis courses (298 and 299 courses) which have a two-year time limit. After two years, failure to complete the assigned work for an "RP" grade will result in an automatic grade change to an "NC" grade which does not affect the GPA.

A final grade will be assigned to all segments of the course on the basis of overall quality. Any extension of this time period must receive prior authorization by the instructor and department chair. Forms for this procedure are available in the Student Services Center or at www.sjsu.edu/registrar/forms/.

"W" (Withdrawal)

The "W" symbol indicates that the student was permitted to drop the course after the fourteenth day of instruction with the approval of the Director of Academic Advising and Retention Services. It carries no connotation of quality of student performance and is not used in calculating grade point average or progress points. For regulations governing dropping a course and withdrawing from all courses, see index.

**"WU" (Withdrawal Unauthorized)**

The symbol "WU" indicates that an enrolled student did not officially withdraw from or drop the course and failed to complete course requirements. It is used when, in the opinion of the instructor, assignments or course activities or both were insufficient to evaluate academic performance using A, B, C, D, or F. For purposes of calculating the grade point average this symbol is equivalent to an "F". In courses graded Credit/No Credit, or in cases where the student has elected Credit/No Credit evaluation, the symbol "NC" shall be used instead. Graduate students are advised to refer to the section on "Graduate Academic Standards" for additional information on how the grading system affects them.

GRADE	POINTS PER UNIT
A+	4.0
A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0
C-	1.7
D+	1.3
D	1.0
D-	0.7
F	0.0
WU	0.0
NC	0.0
CR	0.0
I	0.0
IC	0.0
AU	0.0
W	0.0
RP	0.0

The scholarship average is based on courses in which letter grades are earned (the total number of grade points divided by the number of units in letter-graded courses). Grade points are assigned as follows.

The grades of CR, NC, AU (audit), I, W and RP (report in progress) receive no grade points and the units are not considered in computing grade point average. A plus or minus sign following a grade of A, B, C, or D will affect the grade points allowed as indicated in the table. A grade of A+ cannot exceed 4.0 grade points per California Code of Regulations, Title 5, Division 5, Chapter 1, SubChapter 2, Article 2, 40104.

To qualify for graduation or to be recommended for transfer to another institution, students must have earned at least twice as many grade points as there are units in the credit value of all letter-graded courses for which they have registered.

Unit of Credit

The unit of credit is the semester unit which is equal to one and one-half quarter units.

Change of Grade

A change of grade may be made only in the case of a declared clerical or other administrative error, except as indicated below. The definition of a clerical error is an error made by the instructor or by an assistant in calculating or recording the grade.

An appeal for a change of grade must be initiated by the student and must first be approved by the instructor and then by the chairperson of the department in which the course is offered before it can be accepted by the Registrar's Office. An appeal for a change of grade should be initiated as soon as possible, normally within one semester, in order to insure that proper documentation is available.

A letter grade may be changed to any other letter grade, except "W," or to "incomplete," if the student qualifies. Changes (except for those required by clerical error) shall not be made to "AU," or to non-traditional grades "CR" or "NC." However, non-traditional grades of "CR" or "NC" may be changed to an appropriate non-traditional symbol or to "incomplete," if the student qualifies, but may not be changed to "W," "AU," or to letter grades. Audit "AU" symbols may not be changed to any other grade.

The Student Fairness Committee serves any student who wishes to seek redress for alleged injustice occurring in his or her academic relation to any instructor. An official petition form can be secured from the faculty chairperson of the Student Fairness Committee.

Repeating Courses

Options for Repeating Courses

There are three ways to repeat courses which have already been completed. In the first case, Academic Renewal, the grade received the second time replaces the first grade that was received in the calculation of the grade point average. In the second case, the second grade is averaged with the first grade. In the third case, the second grade is posted on the transcript record, but there is no impact on the grade point average.

Students may not repeat a course in which an incomplete ("I") was assigned as a means for clearing the incomplete. See Grading System section on incompletes. Original grades remain on the transcript in each of the cases listed below; specific procedures and conditions are required for repeating courses. Students are not permitted to register for repeating courses prior to the first day of classes. Students repeating courses must register during the Late Registration period to allow non-repeaters a chance to enroll during the Advance Registration period via MySJSU. Permission numbers are required for adding classes during the Late Registration period.

1. Academic Renewal (Undergraduates Only)

Under the Academic Renewal policy, matriculated undergraduate students awarded course grades of C-, D+, D, D-, F, IC or WU may elect to repeat courses taken at SJSU for purposes such as improving their mastery of a subject in which they may have had difficulty and raising their grade point average. Disqualified undergraduate SJSU students may also repeat courses with grades of C-, D+, D, D-, IC, F, or WU for Academic Renewal through SJSU's Open University. The Academic Renewal option for repeating a course is limited to one repeat per course. The grade earned for Academic Renewal is the grade of record, but repeating a course for Academic Renewal does not remove the previous grade from the transcript, and only the most recently earned grade prior to Academic Renewal is disregarded for Academic Renewal. Students must file an Academic Renewal petition with the Student Services Center by the deadline to add classes.

Students admitted to SJSU with 55 or fewer units may repeat a maximum of 18 units for Academic Renewal; students who enter as upper division students (56 or more units) may repeat a maximum of 9 units for Academic Renewal. Eligible students may seek Academic Renewal for courses taken elsewhere, but the renewal course must be taken at SJSU in all cases. Eligibility for Academic Renewal may be determined only by the Registrar's Office and/or with approval by the departments for specific major requirements. As with academic standing, academic renewal that results in a higher GPA will not remove a prior academic standing.

Important: Academic renewal is not available to graduate students.

2. Averaged Grades

Students in clear standing who received a "C-", "D+", "D," "D-," "F," "IC" or "WU" the first time they took a course may sign up for the course again. Unlike Academic Renewal, the second grade is averaged with the first grade.

Units and grade points for all repeated attempts will appear on transcripts and will be calculated into the grade point average. However, units for repeated courses for which credit was received on the first attempt can not be counted for graduation credit and will be subtracted from the total units completed when the student applies for graduation. Students should keep track of such units and not count them twice in the total units taken for the degree.

Repeating a course in which a NC (no credit) was received on the first attempt: If the student earns a passing grade (A, B, C, for courses graded A, B, C/NC), the units will be added to the total units completed and grade points for the repeated attempt will be calculated into the grade point average. If the grade received is CR (for a course graded CR/NC), the units will be added to the total units completed but the CR grade will have no effect on the grade point average.

3. Transcript Record

Repeating a course in which a "C" or better was received on the first attempt or for which previous credit was granted **at another institution:**

While the units and grade points will appear on the transcript and the grade will be calculated into the grade point average, students should be aware that the units and grade points for the repeated courses cannot be counted for graduation credit. Such units and grade points for repeated courses will be subtracted when the student applies for graduation. Students should also keep track of these units and not count them twice for graduation purposes.

Maximum Unit Loads

An undergraduate student who takes 12 or more units is classified as full-time. Students with work responsibilities outside of school should reduce their study loads appropriately.

The maximum load for graduate students is normally 15 semester units. Reasonable exceptions beyond this number may be approved, for sufficient cause, by the graduate student's official advisor. Loads beyond 18 units will need special approval by the student's advisor and department chair. The University Graduate Studies Committee strongly recommends that graduate students carry no more than 12 units of 200-level work in any one semester. There is no official minimum load for graduate students other than for those who wish to receive subsistence or other benefits.

Immigration and Customs Enforcement (ICE) regulations require that undergraduate international students maintain full-time status of 12 semester units and, for graduate students, 9 semester units, excluding summer. To appeal this regulation, go to International Programs and Services.

Excess Units

Undergraduate students can enroll for 18 or more units under the following conditions (units above 17 must be added after the start of classes):

The student's major department chair, or program advisor, may approve programs to 18 units for students in good standing if the excess is essential to arrange a program.

Students with exceptional scholastic records, and/or with unusual need for programs in excess of 18 units, may submit a petition for excess units to the Student Services Center during the first three weeks of Advance Registration if their GPA is 3.0 or higher. The petition must be signed by a major advisor if the GPA is between 2.0 and 3.0. Petitions and information are available at the Student Services Center or at www.sjsu.edu/registrar/ forms.

Transcript of Record

Transcript requests

1. The request for an official SJSU transcript must be done in writing.
2. Email requests will not be accepted.
3. Same-day or rush service for official transcripts is not available.
4. Click the following link and complete the transcript request form: <http://www.sjsu.edu/registrar/Transcripts.htm> If you cannot download the Transcript Request Form, please write a letter requesting your transcript and include the following information:
 - Full name
 - Any previous names you may have attended under
 - Social Security Number
 - Date of birth
 - Current address and phone number
 - Email address
 - Dates of attendance
 - Complete address of where to mail transcript(s)
 - Your Signature and date signed

There is **no fee** for transcripts.

Mail your written request to:

San José State University
Office of the Registrar
One Washington Square
San José, CA 95192-0009

—or—

Fax your written request to:

Attn: Registrar's Office
408-924-2077

General Transcript Regulations:

1. Please allow 5 business days to process routine requests. Rush service IS NOT available. Requests will be processed as quickly as possible. However, end of term requests may take longer, contingent on when grades or degrees are posted.
2. Transcripts are not released without a student signature. Request by persons other than the student will not be honored without written authorization from student and picture identification.
3. Transcripts are not issued until all accounts with the University are cleared. Processing will not begin until notification is received from the Bursar's Office.
4. Transcripts from high schools or other colleges cannot be duplicated. You must apply directly to each school for copies of their transcripts.

Verification of Unit Load

In verifying enrollments to the Veterans' Administration, scholarship boards and loan agencies, the university reports the total number of units enrolled as the official unit load for an undergraduate.

The definition of "full-time student" made by the Immigration Service, Veteran's Administration and other agencies may vary. Students who are concerned with their status are urged to contact the specific agency involved to determine its policies. Full veterans' subsistence payments require a course load of 12 weighted semester units for both graduate and undergraduate students. Graduate students from foreign countries who are in the U.S. on student visas must normally carry nine semester units to maintain full-time student status, while undergraduate international students must carry 12 semester units to maintain the required full-time status.

Disqualification and Probation – Undergraduate

Academic Standards

Students studying for a baccalaureate degree are expected to maintain a grade point average of 2.0 "C" or better in their academic work at SJSU and in their overall collegiate record in order to continue in good standing. In determining a student's eligibility to remain enrolled in the university, both quality of performance and progress toward the student's objective are weighed. Use of grade points and grade point average for all letter-graded courses determines quality of performance. The length of time in meeting requirements is a factor in determining progress toward objectives. While the Registrar's Office makes every effort to notify students of their academic status, it is the student's responsibility to continuously monitor his or her own academic standing at <http://my.sjsu.edu>.

Academic Disqualification

Disqualification means that the student has failed to maintain satisfactory academic progress and is involuntarily separated from the university. Disqualified students are not eligible to attend classes as matriculated students, but they may register through Extended Studies for Open University courses. See "Extended Studies and Open University" elsewhere in this catalog for additional information.

Undergraduate students are disqualified when, after being on probation or continued probation, they drop below a specified SJSU GPA for their class level. For the different class levels these are:

Senior or Postbaccalaureate.....	1.95
Junior	1.85
Sophomore	1.70
Freshman	1.50

Undergraduate students are eligible to repeat a **limited** number of courses with grades of C-, D+, D, D-, F, U, WU, or IC for Academic Renewal through SJSU's Open University.

A graduate student who is on academic probation is disqualified if he or she fails to earn better than a 3.0 grade point average each term until the required 3.0 grade point average is again established. For details, see "University Disqualification" in the Postbaccalaureate and Graduate section in this catalog for additional information.

All work taken through Extended Studies is included in the cumulative record and is considered in the determination of probation and disqualification.

The Registrar's Office will notify any student who, according to the university's records, appears to be disqualified. These students will be disenrolled and their registrations cancelled unless they are reinstated to the university. See section on Reinstatement.

Academic disqualification policies revised in Fall 2003.

Academic Probation

An undergraduate student is placed on academic probation if the SJSU cumulative grade point average falls below a "C" average (2.0).

Students will remain on academic probation until they obtain clearance of probation or are disqualified.

All work taken through Extended Studies is included in the cumulative record and is considered in the determination of probation and disqualification.

Students are removed from probation and restored to clear standing when they earn a cumulative grade point of at least "C" (2.0) in all academic work attempted at SJSU.

Academic Progress in Developmental Courses

Effective Fall 1998, the California State University Executive Order 665 requires that first-year and lower division transfer students who are placed into remedial courses as a result of their ELM/EPT scores are required to enroll in and attend the prescribed course(s) as a condition of their enrollment in other courses.

In addition to the mandatory placement, these students must satisfactorily complete their remedial coursework within a prescribed amount of time. Students who fail to do so are placed on a leave of absence and are subject to administrative disqualification from the university.

See www.math.sjsu.edu/%7EMcclosky for complete information on the EO 665 policies and practices.

Administrative-Academic Disqualification

A student who has been placed on administrative-academic probation may be disqualified from further attendance if:

1. The conditions for removal of administrative-academic probation are not met within the period specified;
2. The student becomes subject to academic probation while on administrative-academic probation;
3. The student becomes subject to administrative-academic probation for the same or similar reason for which he or she has been placed on administrative-academic probation previously, although not currently in such status.

When such action is taken, the student will receive written notification, including an explanation of the basis for the action.

Administrative – Academic Probation

A student may be placed on administrative-academic probation by action of the Provost for any of the following reasons:

1. Withdrawal from all or a substantial portion of a program of studies in two successive terms or in any three terms. A student whose withdrawal is directly associated with a chronic or recurring disability or its treatment is not subject to administrative-academic probation for such withdrawal.
2. Repeated failure to progress toward the stated degree or other program objective, including that resulting from assignment of 15 units of NC, when such failure appears to be due to circumstances within the student's control.
3. Failure to comply, after due notice, with an academic requirement or regulation which is routine for all students or a defined group of students (examples: failure to complete a required practicum, failure to complete a specified number of units as a condition for receiving student financial aid).

When such action is taken, the student will be notified in writing and provided with the conditions for removal from probation and the circumstances which would lead to disqualification, should probation not be removed.

Disqualification in the Major

Each college, school, program and/or department has the option of employing the disqualification-from-the-major policy. Those which opt to disqualify from the major will disqualify all students who are below a 2.0 grade point average for all units in the major at SJSU and have achieved less than a 2.0 grade point average in the major in two successive semesters. Students disqualified under this policy will be notified by the department, school or college that the major will be changed to undeclared unless another major for which they are qualified is selected. Extenuating circumstances will be acted upon by an appropriate faculty committee at the school or department level or, when appropriate, the college level.

Those programs, departments, schools and colleges which may opt to employ this policy are:

- School of Journalism and Mass Communications
- School of Nursing
- Occupational Therapy Department
- College of Engineering

Reinstatement and Readmission of Undergraduate Students After Academic Disqualification

Disqualified undergraduate students must petition the Admissions and Standards Committee for reinstatement and file an application for readmission at www.csumentor.edu. All of the following procedures must be followed for the student to be considered for reinstatement.

1. Present a “Petition for Reinstatement” to the Registrar’s Office within the published deadlines (available in the Student Services Center) under one of the following conditions:

- **Extenuating circumstances.** Student presents evidence of mitigating or extenuating circumstances that disrupted previously satisfactory academic performance and demonstrates that the negative circumstances have now been corrected; or
- **Program of study.** Student presents a program of appropriate courses leading to the degree objective (minimum of 6 semester units), approved in advance by the major advisor and completed with at least a B 3.0 GPA in each course, demonstrating the student’s ability to satisfactorily complete university academic requirements and improve the GPA; or
- **After a second disqualification,** student presents an SJSU transcript demonstrating an overall SJSU GPA of 2.0 or better (courses must be completed through Extended Studies via Open University in order to raise the SJSU GPA).
- **Special consideration.** See petition instructions and forms for information; or
- **Petitioned Grade change.** This category is reserved only for instructor error in computing final grades. Actions taken on your record such as academic renewal; retroactive petitions of any kind; disregard of previous semester; incomplete grades reverted to letter grades or vice-versa, and other changes in grades resulting in a higher GPA due to reasons other than an instructor error, will not apply to this category.

In all cases, permission of the major department is required for reinstatement to that major.

2. Submit an “Application for Admission” before the established deadline, if there has been one full intervening semester. See petition instructions and forms for additional information.

Petitions for reinstatement and information regarding the application process are available to disqualified students from the Student Services Center or at www.sjsu.edu/registrar/forms/index.htm.

At least one semester must have passed since the disqualification and the program of study must have been approved by the student’s major advisor and department chair. Departments are not required to authorize reinstatement from disqualification. Enrollment through Extended Studies (Open University) as well as enrollment at any other accredited institution of higher learning, may be used to satisfy the program of study. The minimum program of study is two courses totaling six or more units, but up to nine units may be required by the major department. The petition, with transcripts which support the completion of the program of study, must be in the hands of the committee 30 days prior to the beginning of the semester in which the student wishes to enroll. A student who has been disqualified a second time must raise his/her SJSU grade point average to a 2.0 before a petition will be considered. Undergraduates who have been disqualified a second time are not eligible for a program of study.

Petitions will not be accepted from students who, for non-payment of fees, or any other reason, have “holds” on their records.

The Admissions and Standards Committee will review all petitions for reinstatement and make one of the following recommendations to the Associate Vice President for Undergraduate Studies.

1. Rescind the disqualification, but only in cases of error, or in such cases where the student was unable to make a change in program or to withdraw from the university due to circumstances beyond his or her control.
2. Confirm the disqualification but immediately reinstate the student to probation status when a review of the student’s record shows a high potential to make up any deficiencies in the next semester. If approved for reinstatement, a disqualified student is eligible for enrollment in the semester following disqualification provided he or she has completed the readmission process.
3. Confirm the disqualification and deny reinstatement.

The following regulations apply to readmission following disqualification:

1. Disqualified students are subject to the same enrollment limitations and admissions application requirements as all other students. Readmission to the university does not assure readmission to any particular semester or to a specific degree objective.
2. Regardless of the grade point average earned at any other institution, the SJSU cumulative grade point average must be raised to a “C” (2.0) before a student will be placed on good standing.
3. The student must achieve a grade point average above 2.0 in each semester following readmission until such time as a cumulative SJSU grade point average of “C” (2.0) has been earned. Failure to do so will result in a second disqualification.

Special Scholastic Regulations for Extended Studies

Disqualified students may enroll in Extended Studies programs; however, the university, in considering applications for readmission and reinstatement, does not accept 400-series course credit as evidence of qualification for reinstatement.

Students desiring to apply extension credit toward the requirements for any degree or teachers’ credentials must secure approval from the department that is authorizing the reinstatement.

All students enrolling through Extended Studies must meet course prerequisites and are bound by all applicable university regulations given in this catalog, or in the most recent Winter Session or Open University schedule of classes. Information concerning tuition fees, admission and registration policies and procedures, withdrawal and refund policies, grading systems, academic standards and student advisement may be found in one or more of these publications. Regulations concerning the application of Extended Studies credit toward bachelor’s degrees and toward residence credit in the university are given elsewhere in this catalog under “Credit Transferred from Extended Studies”.

Admission – Procedures and Policies

Requirements for admission to San José State University are in accordance with Title 5, Chapter 1, Subchapter 3, of the California Code of Regulations. Complete information is available at www.csumentor.edu/planning/.

Electronic versions of the CSU undergraduate, graduate and international applications are accessible at www.csumentor.edu. The CSUMentor system allows students to browse through general information about CSU's twenty-three campuses, view multimedia campus presentations, send and receive electronic responses to specific questions, and apply for admission and financial aid.

Applying online via www.csumentor.edu is encouraged, and admissions decisions are usually expedited, when on-line applications have been submitted. Application in "hard copy" form may be obtained online or from the Office of Admission at any of the campuses of the California State University.

Application Procedures-Undergraduate

Prospective students applying for part-time or full-time undergraduate programs of study in day or evening classes must file a complete undergraduate application. The \$55 nonrefundable application fee should be in the form of a check or money order payable to "The California State University" or by credit card if submitting the online application, and may not be transferred or used to apply to another term. An alternate major may be indicated on the application. The applications of persons denied admission to an impacted and/or closed campus may be re-routed to another campus at no cost, but only if the applicant is CSU eligible.

Importance of Filing Complete, Accurate and Authentic Application Documents

San José State University advises prospective students that they must supply complete and accurate information on the application for admission, residence questionnaire, and financial aid forms. Further, applicants must, when requested, submit authentic and official transcripts of all previous academic work attempted. Failure to file complete, accurate, and authentic application documents may result in denial of admission, cancellation of registration or academic credit, suspension, or expulsion (Section 41301, Article 1.1, Title 5, California Code of Regulations).

Admission of Adult Students

As an alternative to regular admission criteria, an applicant who is twenty-five years of age or older may be considered for admission as an adult student if he or she meets all of the following conditions:

1. Possesses a high school diploma (or has established equivalence through either the General Educational Development or California High School Proficiency Examinations).
2. Has not been enrolled in college as a full-time student for more than one term during the past five years.
3. If there has been any college attendance in the last five years, has earned a C average or better in all college work attempted.

Consideration will be based upon a judgment as to whether the applicant is as likely to succeed as a regularly admitted freshman or transfer student and will include an assessment of basic skills in the English language and mathematical computation. For more information, consult the Admissions Office.

Admissions Application Acknowledgment

On-time applicants may expect to receive an acknowledgment from the campuses to which they have applied within two to four weeks of filing the application. The notice may also include a request that applicants submit additional records necessary to evaluate academic qualifications. Applicants may be assured of admission if the evaluation of relevant qualifications indicates that applicants meet CSU admission requirements and campus requirements for admission to an impacted program. Unless specific written approval/confirmation is received, an offer of admission is not transferable to another term or to another campus.

Admissions Notification

The Office of Admissions normally begins sending acceptance letters to applicants beginning in November for admission to the fall semester and beginning in September for admission to the spring semester. Letters from departments or faculty do not constitute admission to the university.

Applicants are not admitted as students in the regular session of the university until they have received an official letter of admission from the Office of Admissions.

Hardship Petitions

The campus has established procedures for consideration of qualified applicants who would be faced with extreme hardship if not admitted. Petitioners should write the Admissions Office in care of the Exceptional Admission Committee. Students must also provide two letters of recommendation as well as a statement on their own behalf.

Health Screening

Measles Rubella, and Hepatitis B Immunizations

Entering CSU students are required to present proof of the following immunizations to the CSU campus they will be attending before the beginning of their first term of enrollment.

Measles and Rubella: All new and readmitted students born after January 1, 1957 must provide proof of full immunization against measles and rubella prior to enrollment.

Hepatitis B: All new students who will be 18 years of age or younger at the start of their first term at a CSU campus must provide proof of full immunization against Hepatitis B before enrolling. Full immunization against Hepatitis B consists of three timed doses of vaccine over a minimum 4 to 6 months period.

If you need further details or have special circumstances, please the Student Health Service, 408-924-6120. Each incoming freshman who will be residing in on-campus housing will be required to return a form indicating that they have received information about meningococcal disease and the availability of the vaccine to prevent one from contracting the disease and whether or not he or she has chosen to receive the vaccination.

These are not admission requirements, but shall be required of students as conditions of enrollment in CSU. A campus is authorized to expand the Measles and Rubella immunization requirement to students born before January 1, 1957, or to require full immunization prior to enrollment without provision for conditional enrollment for certain groups who may have increased risk of exposure to these diseases. These groups include: students enrolled in nutrition and food science, nursing, occupational therapy and any practicum, student teaching or field work involving preschool-age or school-age children, or field work taking place in a hospital or health care setting.

Students can obtain the necessary immunizations from their own provider or by scheduling an appointment with the Student Health Center.

It is the student's responsibility to ensure that the university has the correct and most current email and U.S. Postal address on file at <http://my.sjsu.edu>

Students must check online messages frequently, as SJSU uses the messaging feature within MySJSU to communicate important information.

Application Filing Periods

Terms in 2008-2010	Applications first accepted	Student notification begins
Fall Semester 2008	October 1, 2007	December 2007
Spring Semester 2009	August 1, 2008	September 2008
Fall Semester 2009	October 1, 2008	December 2008
Spring Semester 2010	August 1, 2009	September 2009

SJSU accepts applications until capacities are reached. Many campuses limit undergraduate admission in an enrollment category because of overall enrollment limits. If applying after the initial filing period, consult the admission office for current information. Similar information is conveniently available at www.csumentor.edu.

Honors at Entrance

To foster superior scholarship as a desirable academic characteristic and to recognize outstanding entering students, San José State University has established the award of Honors at Entrance. Entering freshmen are eligible with a grade point average of 3.6 or higher. Upper division transfer students are eligible with a grade point average of 3.5 or higher. Lower division transfers must have both 3.6 or higher high school GPA and a 3.50 or higher transfer GPA.

The advantages to an entering student are:

1. Priority registration for the first two semesters;
2. Honors at entrance annotation on the student's permanent academic records;
3. Consideration for admission to the Humanities Honors program.

For more information contact the Student Services Center or the Office of Undergraduate Studies.

Immigration Requirements for Licensure

The Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (P.L. 104-193), also known as the Welfare Reform Act, includes provisions to eliminate eligibility for federal and state public benefits for certain categories of lawful immigrants as well as benefits for all illegal immigrants.

Students who will require a professional or commercial license provided by a local, state, or federal government agency in order to engage in an occupation for which the CSU may be training them must meet the immigration requirements of the Personal Responsibility and Work Opportunity Reconciliation Act to achieve licensure. Information concerning the regulation these requirements are available from the Registrar's Office, Student Services Center.

Impacted Programs

The CSU designates programs as impacted when more applications from CSU regularly eligible students are received in the initial filing period (October and November for fall terms and August for spring terms) than can be accommodated. Some programs are impacted at every campus where they are offered; others are impacted only at some campuses. Candidates for admission must meet supplementary admission criteria if applying to an impacted program.

The CSU will announce during the fall filing period those programs that are impacted and the supplementary criteria campuses will use. Detailed impaction information is available at www.calstate.edu/AR/impactioninfo.shtml and via www.csumentor.edu. That announcement will also be published in the **CSU Review** distributed to high school and college counselors, and made available online at www.calstate.edu/AR/csureview. Information about the supplementary criteria is also provided to program applicants.

Applicants must file applications for admission to an impacted program during the initial filing period. Applicants who wish to be considered in impacted programs at more than one campus should file an application at each campus for which they seek admissions consideration.

Over Sixty Program

San José State University has established a permanent program which allows California residents 60 years of age or older to enroll in regular session courses without payment of certain specified fees and with reduction in the levels of others. Applicants interested in this program must be admissible as stipulated in Title 5 of the California Code of Regulations and shall, at time of enrollment, register last after regular students have registered for classes. Further information is available from the Student Services Center or Educational Counseling in Counseling Services.

Reservation

The university reserves the right to select its students and deny admission to the university or any of its programs as the university, in its sole discretion, determines appropriate based on an applicant's suitability and the best interests of the university.

Supplementary Admission Criteria

Each campus with impacted programs uses supplementary admission criteria in screening applicants. Supplementary criteria may include rank-ordering of freshman applicants based on the CSU eligibility index or rank-ordering of transfer applicants based on the overall transfer grade point average, completion of specified prerequisite courses, and a combination of campus-developed criteria. Applicants for freshman admission to impacted campuses or programs are required to submit scores on either the SAT or the ACT. For fall admission, applicants should take tests as early as possible and no later than October of the preceding year.

The supplementary admission criteria used by the individual campuses to screen applicants appear periodically in the **CSU Review** and are made available by the campuses to all applicants seeking admission to an impacted program. Details regarding the supplemental admissions criteria are also provided at www.calstate.edu/AR/impactioninfo.shtml.



The California State University Admissions Handbook has expanded admissions information and is located at www.calstate.edu/ar/AdmissionHandbook2007_08fin.pdf

Admission – Undergraduate Requirements

Admission – Freshman Requirements

Generally, first-time freshman applicants will qualify for regular admission if they meet the following requirements:

1. Have graduated from high school, have earned a Certificate of General Education Development (GED) or have passed the California High School Proficiency Examination; and
2. Have a qualifiable minimum eligibility index (see section on Eligibility Index); and
3. Have completed with grades of C or better each of the courses in the comprehensive pattern of college preparatory subject requirements (see "Subject Requirements").

Eligibility Index

Eligibility Index – The eligibility index is the combination of the high school grade point average and scores on either the ACT or the SAT. Grade point averages (GPA) are based on grades earned in courses taken during the final three years of high school. Included in calculation of GPA are grades earned in all college preparatory "a-g" subject requirements, and bonus points for approved honors courses.

Up to eight semesters of honors courses taken in the last three years of high school, including up to two approved courses taken in the tenth grade can be accepted. Each unit of A in an honors course will receive a total of 5 points; B, 4 points; and C, 3 points.

A CSU Eligibility Index (EI) can be calculated by multiplying a grade point average by 800 and adding your total score on the mathematics and critical reading scores of the SAT. Students who took the ACT, multiply your grade point average by 200 and add ten times the ACT composite score. Persons who are California high school graduates (or residents of California for tuition purposes) need a minimum index of 2900 using the SAT or 694 using the ACT. The Eligibility Index Table illustrates several combinations of required test scores and averages.

For admission to terms during the 2008-2009 college year, the university has no plans to include the writing scores from either of the admissions tests in the computation of the CSU Eligibility Index.

Persons who neither graduated from a California high school nor are a resident of California for tuition purposes, need a minimum index of 3502 (SAT) or 842 (ACT). Graduates of secondary schools in foreign countries must be judged to have academic preparation and abilities equivalent to applicants eligible under this section.

Eligibility Index Table for California High School Graduates or Residents of California

The CSU uses only the SAT mathematics and critical reading scores in its admission eligibility equation. The SAT or ACT writing score is not currently used by CSU campuses.

GPA	ACT Score	SAT-I Score	GPA	ACT Score	SAT-I Score	GPA	ACT Score	SAT-I Score
3.00 and above qualifies with any score			2.66	17	780	2.31	24	1060
2.99	10	510	2.65	17	780	2.30	24	1060
2.98	10	520	2.64	17	790	2.29	24	1070
2.97	10	530	2.63	17	800	2.28	24	1080
2.96	11	540	2.62	17	810	2.27	24	1090
2.95	11	540	2.61	18	820	2.26	25	1100
2.94	11	550	2.60	18	820	2.25	25	1100
2.93	11	560	2.59	18	830	2.24	25	1110
2.92	11	570	2.58	18	840	2.23	25	1120
2.91	12	580	2.57	18	850	2.22	25	1130
2.90	12	580	2.56	19	860	2.21	26	1140
2.89	12	590	2.55	19	860	2.20	26	1140
2.88	12	600	2.54	19	870	2.19	26	1150
2.87	12	610	2.53	19	880	2.18	26	1160
2.86	13	620	2.52	19	890	2.17	26	1170
2.85	13	620	2.51	20	900	2.16	27	1180
2.84	13	630	2.50	20	900	2.15	27	1180
2.83	13	640	2.49	20	910	2.14	27	1190
2.82	13	650	2.48	20	920	2.13	27	1200
2.81	14	660	2.47	20	930	2.12	27	1210
2.80	14	660	2.46	21	940	2.11	28	1220
2.79	14	670	2.45	21	940	2.10	28	1220
2.78	14	680	2.44	21	950	2.09	28	1230
2.77	14	690	2.43	21	960	2.08	28	1240
2.76	15	700	2.42	21	970	2.07	28	1250
2.75	15	700	2.41	22	980	2.06	29	1260
2.74	15	710	2.40	22	980	2.05	29	1260
2.73	15	720	2.39	22	990	2.04	29	1270
2.72	15	730	2.38	22	1000	2.03	29	1280
2.71	16	740	2.37	22	1010	2.02	29	1290
2.70	16	740	2.36	23	1020	2.01	30	1300
2.69	16	750	2.35	23	1020	2.00	30	1300
2.68	16	760	2.34	23	1030			
2.67	16	770	2.33	23	1040			
			2.32	23	1050			
						1.99 and below		
						does not qualify for		
						regular admission.		

An applicant with a grade point average of 3.00 or above (3.61 for nonresidents) is not required to submit test scores. However, all applicants for admission are urged to take the SAT or ACT and provide the scores of such tests to each CSU to which they seek admission. Campuses use these test results for advising and placement purposes and may require them for admission to impacted majors or programs. Impacted CSU campuses require SAT or ACT scores of all applicants for freshman admission.

Provisional Admission – Freshmen

San José State University may provisionally admit first-time freshman applicants based on their academic preparation through the junior year of high school and planned for the senior year. The campus will monitor the senior year of study to ensure that admitted students complete their senior year of studies satisfactorily, including the required college preparatory subjects, and graduate from high school. Students are required to submit an official transcript after graduation to certify

that all course work has been satisfactorily completed. Official high school transcripts must be received prior to deadline set by the university. In no case may documentation of high school graduation be received any later than the census date for a student's first term of CSU enrollment. A campus may rescind admission decisions, cancel financial aid awards, and cancel any university registration for students who are found not to be eligible after the final transcript has been evaluated.

Applicants will qualify for regular (non-provisional) admission when the university verifies that they have graduated and received a diploma from high school, have a qualifiable minimum eligibility index, have completed the comprehensive pattern of college preparatory "a-g" subjects, and, if applying to an impacted program, have met all supplementary criteria.

Subject Requirements

The California State University requires that first-time freshman applicants complete, with grades of C or better, a comprehensive pattern of college preparatory study totaling 15 units. A unit is one year of study in high school.

- **2 years of social science,** including 1 year of U.S. history, or U.S. history and government.
- **4 years of English**
- **3 years of math** (algebra, geometry and intermediate algebra).
- **2 years of laboratory science** (1 biological and 1 physical, both with labs).
- **2 years in the same foreign language** (subject to waiver for applicants demonstrating equivalent competence).
- **1 year of visual and performing arts:** art, dance, drama/theater, or music.
- **1 year of electives:** selected from English, advanced mathematics, social science, history, laboratory science, foreign language, and visual and performing arts or other courses approved and included on the UC/CSU "a-g" list.

High School Students – Step to College/Unitrack

Students still enrolled in high school will be considered for enrollment in certain special programs if recommended by the principal and the appropriate campus department chair and if preparation is equivalent to that required of eligible California high school graduates. Such admission is only for a given specific program and does not constitute the right to continued enrollment.

Subject Requirement Substitution for Students with Disabilities

All applicants are encouraged to complete the 15 units of college preparatory subjects. If you are unable to complete certain subjects because of your disability, please call the Disability Resource Center at 408-924-6000.

ACADEMIC SUCCESS TIP

Attend the Welcome Convocation

This is a great event to meet other new students and your professors, and kick off the academic year.

Admission – Transfer Requirements

Students who have completed fewer than 60 transferable semester college units (fewer than 90 quarter units) are considered lower division transfer students. Students who have completed 60 or more transferable semester college units (90 or more quarter units) are considered upper division transfer students. Students who complete college units during high school or through the summer immediately following high school graduation are considered first-time freshmen and must meet those admission requirements. Transferable courses are those designated for baccalaureate credit by the college or university offering the courses and accepted as such by the campus to which the applicant seeks admission.

Lower Division Transfer Requirements

Generally, applicants will qualify for admission as a lower division transfer student if they have a grade point average of at least 2.0 (C or better) in all transferable units attempted, are in good standing at the last college or university attended, and meet any of the following standards:

1. Will meet the freshman admission requirements (grade point average and subject requirements) in effect for the term to which they are applying (see "Freshman Requirements" section); or
2. Were eligible as a freshman at the time of high school graduation except for the subject requirements, and have been in continuous attendance in an accredited college since high school graduation, and have made up the missing subjects.

Applicants who graduated from high school prior to 1988 should contact the Admissions Office to inquire about alternative admission programs.

Some CSU campuses do not admit lower division transfer applicants.

Making Up Missing College Preparatory Subject Requirements

Lower division applicants who did not complete subject requirements while in high school may make up missing subjects in any of the following ways.

1. Complete appropriate courses with a C or better in adult school or high school summer sessions.
2. Complete appropriate college courses with a C or better. One college course of at least three semester or four quarter units will be considered equivalent to one year of high school study.
3. Earn acceptable scores on specified examinations.

Please consult with any CSU Admissions Office for further information about alternative ways to satisfy the subject requirements.

Due to enrollment pressures, many CSU campuses do not admit or enroll lower division transfer students.

Upper Division Transfer Requirements

Generally, applicants will qualify for admission as an upper division transfer student if they meet the following requirements:

1. They have a grade point average of at least 2.0 (C or better) in all transferable units attempted; and
2. They are in good standing at the last college or university attended; and they have completed at least 60 transferable semester units of college coursework with a grade point average of 2.0 or higher and a grade of C or better in each course used to meet the CSU general education requirements in written communication, oral communication, critical thinking and quantitative reasoning, e.g. mathematics. The 60 units must include all of the general education requirements in communication in the English language (both oral and written) and critical thinking and the requirement in mathematics/quantitative reasoning (usually 3 semester units) OR the Intersegmental General Education Transfer Curriculum (IGETC) requirements in English communication and mathematical concepts and quantitative reasoning.

Provisional Admission for Transfers

San José State University may provisionally or conditionally admit transfer applicants based on their academic preparation and courses planned for completion. The campus will monitor the final terms to ensure that those admitted complete all required courses satisfactorily. All accepted applicants are required to submit an official transcript of all college level work completed. Campuses will rescind admission for all students who are found not to be eligible after the final transcript has been evaluated. In no case may such documents be received and validated by the university any later than a student's registration for their second term of CSU enrollment.

Admission – International Students

International Student Admission

The CSU must assess the academic preparation of foreign students. For this purpose, "foreign students" include those who hold U.S. temporary visas as students, exchange visitors, or in other nonimmigrant classifications.

The CSU uses separate requirements and application filing dates in the admission of "foreign students." Verification of English proficiency (see the section on TOEFL Requirement for undergraduate applicants), financial resources, and academic performance are each important considerations for admission. Academic records from foreign institutions must be on file by the posted deadlines and, if not in English, must be accompanied by certified English translations.

Priority in admission is given to residents of California. There is little likelihood of nonresident applicants, including international students, being admitted either to impacted majors or to those with limited openings.

International students applying from outside the U.S. should request admission information at least one year in advance of the planned date of attendance. International undergraduate and graduate applications and other information are located at www.csumentor.edu.

Insurance Requirement

Effective August 1, 1995, as a condition of receiving an I-20 or IAP-66 form, all F-1 and J-1 visa applicants must agree to obtain and maintain health insurance as a condition of registration and continued enrollment in the California State University. Such insurance must be in amounts as specified by the United States State Department and San José State University. The campus president or designee shall determine which insurance policies meet these criteria. Further information may be obtained from International Programs and Services, Administration, 223B.

TOEFL Requirement

All undergraduate applicants whose native language is not English and who have not attended schools at the secondary level or above for at least three years full time where English is the principal language of instruction must present a score of 500 or above on the Test of English as a Foreign Language. Engineering majors of all class levels, graduate students and post-baccalaureate applicants require a score higher than 500. Some campuses may also use alternative methods of assessing English fluency.

SJSU minimum TOEFL standards

	Internet	Computer	Paper
Undergraduate	61	173	500
Graduate	80	213	550

English Language Proficiency Test (ELPT)

ELPT	950
ELPT: Engineering, all Graduates and Second Baccalaureate applicants	963

Test Requirements

SAT and ACT

Freshman and transfer applicants who have fewer than 60 semester or 90 quarter units of transferable college credit must submit scores, unless exempt (see "Eligibility Index" section, from either the ACT or the SAT of the College Board. Persons who apply to an impacted program may be required to submit test scores and should take the test no later than October or November. Test scores also are used for advising and placement purposes. Registration forms and dates for the SAT or ACT are available from school or college counselors or from a CSU campus testing office. Or students may write to or call:

The College Board (SAT)

Registration Unit, Box 6200
Princeton, New Jersey 08541-6200
609-771-7588
www.collegeboard.org

ACT Registration Unit

P.O. Box 414
Iowa City, Iowa 52240
319-337-1270
www.act.org

Systemwide Placement Test Requirements

The California State University requires that each entering undergraduate, except those who qualify for an exemption, take the CSU Entry Level Mathematics (ELM) examination and the CSU English Placement Test (EPT) prior to enrollment. These placement tests are not a condition for admission to the CSU, but they are a condition of enrollment. These examinations are designed to identify entering students who may need additional support in acquiring college entry-level English and mathematics skills necessary to succeed in CSU baccalaureate-level courses. Undergraduate students who do not demonstrate college-level skills both in English and in mathematics will be placed in appropriate remedial programs and activities during the first term of their enrollment. Students placed in remedial programs in either English or mathematics must complete all remediation in their first year of enrollment. Failure to complete remediation by the end of the first year may result in denial of enrollment for future terms.

Students register for the EPT and/or ELM at their local CSU campus. Questions about test dates and registration materials may be addressed to the Testing Office, IS 228, <https://testing.sjsu.edu>, 408-924-5980.

English Placement Test (EPT)

The CSU English Placement Test (EPT) is designed to assess the level of reading and writing skills of entering undergraduate students so that they can be placed in appropriate baccalaureate-level courses. The CSU EPT must be completed by all entering undergraduates, with the exception of those who present proof of one of the following:

- A score of "Exempt" on the augmented English CST, i.e. the CSU Early Assessment Program (EAP), taken in grade 11 as part of the California Standards Test.
- A score of 550 or above on the verbal section of the College Board SAT Reasoning Test taken April 1995 or later.
- A score of 660 or above on the writing section of the College Board SAT Reasoning Test
- A score of 24 or above on the enhanced ACT English Test taken October 1989 or later.
- A score of 680 or above on the re-centered and adjusted College Board SAT II: Writing Test taken May 1998 or later.
- A score of 3, 4, or 5 on either the Language and Composition or the Composition and Literature examination of the College Board Scholastic Advanced Placement program.
- Completion and transfer of a course that satisfies the General Education-Breadth or Intersegmental General Education Transfer Curriculum (IGETC) written communication requirement, provided such course was completed with a grade of C or better.
- For detailed information on test dates and requirements, refer to the **SJSU Schedule of Classes (<http://info.sjsu.edu/home/schedules.html>)**.

ACADEMIC SUCCESS TIP

Learn the basics of library research

Get started with a self-paced lesson, located at <http://tutorials.sjlibrary.org>

Entry Level Mathematics (ELM) Exam

The Entry Level Mathematics (ELM) Placement Exam is designed to assess the skill levels of entering CSU students in the areas of mathematics typically covered in three years of rigorous college preparatory courses in high school (Algebra I, Algebra II, and Geometry). The CSU ELM must be completed by all entering undergraduates with the exception of those who present proof of one of the following:

- A score of "Exempt" on the augmented mathematics California Standards Test, i.e., the CSU Early Assessment Program (EAP), taken in grade 11.
- A score of "conditionally exempt" on the augmented CST, i.e. the CSU Early Assessment Program (EAP) plus successful completion of a Senior-Year Mathematics Experience (SYME)
- A score of 550 or above on the mathematics section of the College Board SAT or on the College Board SAT Subject Tests-Mathematics Tests Level I, IC (Calculator), II, or IIC (Calculator).
- A score of 23 or above on the ACT Mathematics Test.
- A score of 3 or above on the College Board Advanced Placement Calculus examination (AB or BC) or Statistics examination.
- Completion and transfer of a course that satisfies the General Education-Breadth or Intersegmental General Education Transfer Curriculum (IGETC) quantitative reasoning requirement provided such course was completed with a grade of C or better.

For detailed information on test dates, fees and other requirements, refer to the **SJSU Schedule of Classes (<http://info.sjsu.edu/home/schedules.html>)**.

Advanced Standing by Examination

Advanced standing by examination permits accelerated progress toward the degree and a wider selection of course work.

Advanced standing by examination is divided into three categories:

1. Advanced placement by examination (no unit credit awarded);
2. Waiver of requirements (no unit credit awarded);
- and —
3. Advanced credit by examination.

Advanced Placement by Examination

See the SJSU *Schedule of Classes* and respective departments for details about all placement examinations.

Calculus and Pre-Calculus

Many students wishing to take calculus or pre-calculus courses must take the Mathematics Placement Exam (MPE) prior to registering. See www.math.sjsu.edu/%7Ecalculus/ for details.

Foreign Language

Placement examinations in French, German and Spanish are recommended for those students who studied language in high school or acquired language skills through life experiences.

Students having completed college level foreign language (at SJSU or elsewhere) generally will not take the placement examination but will enroll in the course for which they qualify on the basis of units completed.

Music

All new and transfer music majors, including graduate students and returning former students, must report to the School of Music and Dance for auditions, advising and placement examinations. Music majors and minors must also audition for a major ensemble before completing registration. Specific details about these auditions are found in the SJSU Schedule of Classes.

Writing Skills Test

A satisfactory score on the Writing Skills Test (WST) is required for enrollment in Written Communication II (i.e. 100W level courses) and all Advanced General Education courses. Soon after passing English 1A and 1B (or equivalents), students should register for the WST. Consult the SJSU Schedule of Classes for the most current information about the WST.

The following students do not need to take the WST to enroll in any classes:

- Students who have completed the Graduate Writing Assessment Requirement (GWAR) at another CSU campus as a matriculated student at the time of completion;
- Students who have earned a baccalaureate degree from a CSU campus.
- Students who have received an approved Undergraduate Requirement Request to grant equivalency to an upper division composition course completed at another university;
- Students who completed a 100W course.

Waiver of Requirements

A satisfactory score on one or more of the following tests will result in a waiver of the requirement, but no unit credit will be awarded. Information on all waiver examinations is available in the Testing Office. There is a test fee associated with some of these exams.

American Institutions

Three different waiver examinations (giving no unit credit) are available in the Testing Office to challenge the U.S. History, U.S. Constitution and California Government General Education requirement (Area F1, F2 and F3). These tests are administered through the Social Sciences Challenge Examination.

Critical Thinking

A waiver examination (giving no unit credit) is available in the Testing Office to challenge the Critical Thinking General Education requirement (Area A3). The Critical Thinking Examination is under the Social Sciences Challenge Examination. Students excused from this requirement by successful completion of this exam must take additional units in Areas B, C, D, E in General Education to reach a total of 39 units.

Written Communication II

Students achieving a waiver-level score on the Writing Skills Test are eligible to waive the requirement, only if their major accepts such a waiver. Consult the schedule of classes for a list of majors which do not accept the waiver.

Transcript Requirements

Transcript Submission

All transcripts submitted must be official and sent directly from the originating school or college to the Office of Admissions. Transcripts submitted by the student are not acceptable unless submitted in a sealed envelope. All records submitted become the property of the university, part of the student's file, and will not be released. If a student does not complete the application or enroll, the records will be kept on file for one year only.

Undergraduate students with college transfer work who are accepted for admission, and who desire advising, will be required to present a set of college transcripts to their departmental advisor. It is suggested that you order a set of transcripts for yourself at the same time you order transcripts sent to the Office of Admissions.

High School Students

Students applying for admission to the university while still attending high school may be evaluated on their self-reported grade point average if 3.0 or higher. A final high school transcript with the date of graduation must be sent to the Office of Admissions at the time of graduation. Applicants who are high school graduates must file a complete transcript which includes the date of graduation.

Undergraduate Transfer Applicants

Transfer applicants who have earned fewer than 60 transferable semester units of credit must file one complete official transcript from the high school of graduation and the ACT or SAT test results in addition to a transcript of the college units attempted.

Transfer applicants who have completed 60 or more semester units of transferable credits and who are applying to the university need not file the high school transcript. However, applicants are cautioned that if, during the evaluation process, it is determined that fewer than 56 semester units of transferable credit have been earned, processing will stop. The applicant will be notified that the high school transcript and ACT or SAT scores are required and admission consideration will again be given only at the time these documents are received and the record is complete.

All undergraduate applicants must file one official transcript from each college in which they have enrolled. This includes USAFI, the Defense Language Institute, Special Sessions (Winter Session and Professional Development), correspondence and audited courses, as well as any college in which the student was enrolled and withdrew without earning credit.

Former students need not order transcripts of work completed at SJSU whether this work was accomplished in the regular session, Open University, Special Sessions, or through the university Professional Development Program. Similarly, they need not reorder transcripts that were previously forwarded to this university. But if they did college work in the interim, such transcripts must be filed with their papers. Students absent from the university for a period of seven years or longer must resubmit all documents required for admission.

ACADEMIC SUCCESS TIP

Broaden your horizons

Something is happening on campus nearly every day that will be new for you. Check the SpartaGuide in the Spartan Daily or drop by Student Involvement to find out about club meetings, lectures, free concerts, and more. A successful university experience happens both inside and outside of the classroom.

Postbaccalaureate Applicants

Applicants to postbaccalaureate and credential programs are required to file one official transcript from each and every college in which they have enrolled. Transcripts must be sent directly from the originating institution to the Office of Admissions. Transcripts submitted by the student are not acceptable unless submitted in a sealed envelope.

All college work must be reported. Failure to comply with this requirement may void the student's application.

Transfer Credit

Agreements with Other Colleges and Universities

SJSU has extensive articulation with many colleges and universities in California. In addition, SJSU has formal transfer agreements with thirteen local community colleges. A comprehensive online transfer planning site is located at <http://transfer.sjsu.edu/>.

Credit from Other Colleges and Universities

California Community Colleges will certify to The California State University those courses which are of baccalaureate level and therefore transferable for at least elective credit. Credits earned in accredited community colleges will be evaluated by the Office of Admissions in accordance with Title 5 of the California Code of Regulations, Section 40409: A maximum of 70 semester units earned in a community college may be applied toward the degree, with the following limitations:

- (a) No upper division credit may be allowed for courses taken in a community college.
- (b) No credit may be allowed for professional courses in education taken in a community college, other than an introduction to education course.

Credits earned in regionally accredited colleges will be evaluated by the Office of Admissions and advanced standing allowed on the basis of the evidence submitted. Credit toward the fulfillment of graduation requirements will be allowed only insofar as the courses satisfactorily completed meet the standards and the requirements of the basic course pattern of the college.

Credits earned in non-accredited colleges may be accepted as a basis for advanced standing only to the extent that the applicant can demonstrate to the satisfaction of the university that a satisfactory degree of proficiency has been attained in the course in question.

For details on transferring graduate credits from other institutions, see section on Graduate Admission Procedures and Policies.

Credit by Examination

Standardized Exams

SJSU grants credit toward its undergraduate degrees for successful completion of various standardized exams. The following are the guidelines for the credit that may be granted at SJSU for each standardized exam. Students may not earn duplicate credit by examination if they have previously taken or subsequently take equivalent exams or coursework.

Credit by Examination

Students may challenge courses by taking examinations developed at SJSU. Credit shall be awarded to those who pass them successfully. Students may not earn credit by exam, however, if they have previously taken or subsequently take equivalent coursework. Specific details may be obtained from the Student Services Center.

Correspondence Courses

The university does not offer and rarely accepts credit for correspondence (home study) courses.

Credit for Noncollegiate Instruction

San José State University grants undergraduate degree credit for successful completion of noncollegiate instruction, either military or civilian, appropriate to the baccalaureate degree, that has been recommended by the Commission on Educational Credit and Credentials of the American Council on Education. The number of units allowed are those recommended in the

- *Guide to the Evaluation of Educational Experience in the Armed Services* and the
- *National Guide to Educational Credit for Training Programs*.

Credit from Extended Studies

Special Session

Courses numbered 100-399 earn degree and residence credit. While the university may accept this work toward baccalaureate and graduate degrees, it is a matter of individual department evaluation as to whether such work is accepted as applying toward the major or minor. A record of this work is maintained by Registrar's Office. Transcripts are available once credit is posted.

Continuing Education Units (CEUs)

Courses numbered 400-499 offer Continuing Education Units (CEUs), a nationally-recognized unit of measurement for a variety of noncredit programs applying toward licensure, promotion or career advancement. CEUs are not applicable to a degree nor to residence unit requirements. A record of this work is maintained by International and Extended Studies. Transcripts are available once credit is posted. Contact International and Extended Studies.

Non-Credit Classes

Courses numbered 800-899 offer no credit and are not applicable toward degrees, credentials or residence unit requirements. A record is not maintained by the Registrar's Office and transcripts are not available.

Distance Education

San José State University delivers distance education courses via Web-based learning management systems and resources. These courses are offered by individual departments in regular and special sessions.

Military Training

Credit granted for military training is based on recommendations of A Guide to the Evaluation of Educational Experiences in the Armed Services, Commission on Accreditation of Service Experiences, American Council on Education, Washington, D.C. The Commission evaluates only formal service school courses at the collegiate level.

Students who desire credit must submit an 8-1/2" x 11" facsimile of the separation papers (usually DD214). Facsimiles of course-completion certificates may also be filed with information from the student giving the beginning and ending dates of the courses, numbers of weeks and location of the installation where taken.

Open University

San José State University's Open University program permits enrollment by non-matriculated students in specified regular curriculum classes on a space-available basis. Formal admission to the university is not required. Registration is confirmed at the first class meeting. A maximum of 24 semester units may be applied toward bachelor degree and not more than six units for a 30-unit master degree requirements. Units earned in Open University may not be used to meet residence unit requirements for a degree.

Regular (matriculated) students in good standing may not enroll as Open University students. Matriculated students are those who have been admitted to San José State University as a regular student for the current semester or were registered as a matriculated student in the previous semester and who have not graduated.

Disqualified students who seek reinstatement following disqualification must see their advisor to develop a program of study to complete a minimum of two courses (6 units) and a maximum of three courses (9 units).

International Students

International students must be regular full-time matriculated students admitted to a degree program. Enrollment in Open University does not qualify international students for the immigration document necessary to enter the United States, to transfer to SJSU from another U.S. university, or to maintain their legal F-1 status. Disqualified international students are eligible to enroll through Open University but must transfer to another I-20 issuing institution to maintain their F-1 student status, or apply for reinstatement to F-1 student status from the U.S. Citizenship and Immigration Services after being re-admitted to SJSU.

Winter Session

Both matriculated and non-matriculated students may enroll in this session. Credit earned may be applied to residence unit requirements for previously matriculated students, and is not subject to the 24-unit limitation in applying toward bachelor's degree requirements at San José State University.

Work Experience Credit

No unit credit is allowed toward bachelors' degrees or master's degrees for teaching or other practical experience. Specific requirements in certain departments may be waived, however, on the basis of previous experience.

SJSU Courses in the California Articulation Number (CAN) System

The California Articulation Number (CAN) System is a cross-reference course numbering system designed to identify courses of comparable content, maintain standards of academic rigor for those courses, and insure their transfer between and among participating institutions. The System streamlines the articulation process by eliminating the need for every campus in the State to articulate their courses with every other campus in order to provide needed transfer and articulation information to prospective transfer students.

The System assures students that CAN courses on one participating campus will be accepted "in lieu of" the comparable CAN course on another participating campus. San José State University has qualified to use California Articulation Numbers (CANs) on the courses listed below.

All courses included in the number system are lower division, transferable courses commonly offered on most college campuses. Upper division and non-baccalaureate-level courses are not included in the System.

SJSU Courses in the CAN System

Administration of Justice (Justice Studies)

- CAN AJ 2 JS 010. Administration of Justice
- CAN AJ 4 JS 014. Concepts of Criminal Law
- CAN AJ 8 JS 020. Principles of Investigation

Anthropology

- CAN ANTH 2 ANTH 012. Human Nature and Destiny I
- CAN ANTH 4 ANTH 011. Cultural Anthropology
- CAN ANTH 6 ANTH 013. Archaeology

Art

- CAN ART 2 ARTH 070A. Prehistoric to Medieval
- CAN ART 4 ARTH 070B. Renaissance to Modern
- CAN ART 6 ART 046. Introduction to Ceramics
- CAN ART 8 ART 024. Beginning Drawing
- CAN ART 10 ART 061. Beginning Painting
- CAN ART 12 ART 068. Beginning Sculpture
- CAN ART 16 ART 013. Three-Dimensional Design Concepts
- CAN ART 18 PHOT 040. Beginning Photography
- CAN ART 26 ART 047. Introduction to Metalsmithing

Biology

- CAN BIOL SEQ-A BIOL 001+002+003. General Biology
- CAN BIOL 4 BIOL 002. General Zoology
- CAN BIOL 6 BIOL 001. General Botany

Business

- CAN BUS 2 BUS 020. Financial Accounting
- CAN BUS 4 BUS 021. Managerial Accounting
- CAN BUS 12 BUS 080. Legal Environment of Business

Chemistry

- CAN CHEM 12 CHEM 055. Quantitative Analysis
- CAN CHEM SEQ-A CHEM 001A-B. General Chemistry

Drama

- CAN DRAM 6 TA 015. Voice and Diction
- CAN DRAM 14 TA 064. Makeup for Stage, Television and Film
- CAN DRAM 18 TA 010. Theatre Appreciation

Economics

- CAN ECON 2 ECON 001A. Principles of Economics: Macroeconomics
- CAN ECON 4 ECON 001B. Principles of Economics: Microeconomics

English

- CAN ENGL 2 ENGL 001A. Composition
- CAN ENGL 6 ENGL 071. Creative Writing
- CAN ENGL 8 ENGL 056A. English Literature
- CAN ENGL 10 ENGL 056B. English Literature
- CAN ENGL 14 ENGL 068A. American Literature
- CAN ENGL 16 ENGL 068B. American Literature

Engineering

- CAN ENGR 8 CE 099. Statics
- CAN ENGR 10 CE 008. Plane Surveying
- CAN ENGR 12 EE 098. Introduction to Circuit Analysis

French

- CAN FREN 2 FREN 001A. Elementary French
- CAN FREN 4 FREN 001B. Elementary French

Geography

- CAN GEOG 2 GEOG 001. Physical Geography
- CAN GEOG 4 GEOG 010. Cultural Geography

German

- CAN GERM 2 GERM 001A. Elementary German
- CAN GERM 4 GERM 001B. Elementary German
- CAN GERM SEQ-B GERM 025A+025B Intermediate German

Government

- CAN GOVT 2 POLS 001. American Government

History

- CAN HIST 2 HIST 010A. Western Civilization
- CAN HIST 4 HIST 010B. Western Civilization
- CAN HIST 8 HIST 020A. History of the American People
- CAN HIST 10 HIST 020B. History of the American People

Italian

- CAN ITAL 2 ITAL 001A. Elementary Italian
- CAN ITAL 4 ITAL 001B. Elementary Italian

Japanese

- CAN JAPN 2 JAPN 001A. Elementary Japanese
- CAN JAPN 4 JAPN 001B. Elementary Japanese

Journalism

- CAN JOUR 2 JOUR 061. Writing for Print, Electronic and Online Media

Mathematics

- CAN MATH 12 MATH 070. Finite Mathematics
- CAN MATH 18 MATH 030. Calculus I
- CAN MATH 20 MATH 031. Calculus II
- CAN MATH 22 MATH 032. Calculus III

Philosophy

- CAN PHIL 2 PHIL 010. Introduction to Philosophy
- CAN PHIL 4 PHIL 061. Moral Issues
- CAN PHIL 6 PHIL 057. Logic and Critical Reasoning
- CAN PHIL 8 PHIL 070A. History of Ancient/Medieval
- CAN PHIL 10 PHIL 070B. History of Renaissance/Modern

Physics

- CAN PHYS SEQ-A PHYS 002A-B. Fundamentals of Physics
- CAN PHYS SEQ-B PHYS 050,051,052. General Physics Series

Statistics (Psychology)

- CAN STAT 2 STAT 095. Elementary Statistics

Recreation and Leisure Studies

- CAN REC 2 REC 090. Foundations of Leisure and Recreation

Russian

- CAN RUSS SEQ-A RUSS 001A,1B. Elementary Russian

Sociology

- CAN SOC 2 SOC 001. Introduction to Sociology
- CAN SOC 4 SOC 080. Social Problems

Spanish

- CAN SPAN 2 SPAN 001A. Elementary Spanish
- CAN SPAN 4 SPAN 001B. Elementary Spanish
- CAN SPAN SEQ-B SPAN 025A, 025B. Intermediate Spanish

Speech (Communication Studies)

- CAN SPCH 4 COMM 020. Public Speaking
- CAN SPCH 6 COMM 040. Argumentation and Advocacy

College Board Advanced Placement Program (AP)

AP (Advanced Placement) Exams

SJSU grants credit toward its undergraduate degrees for successful completion of examinations of the Advanced Placement Program of the College Board. Students who present scores of three or better will be granted up to six semester units (nine quarter units) of college credit. The number of units granted, course equivalence, and satisfaction of requirements vary.

Requires scores of 3-5 for credit to be granted.

EXAM	UNITS	COURSE	GE CREDIT (COMMENTS)
ACS	3.....	CHEM 030A.....	Area B1 (3 units, no lab)
Art, History	6.....	ARTH 070A, 070B	Area C1(3 units)
Biology.....	6.....	BIOL 010	Area B2 (3 units, no lab)
Calculus AB*	3.....	MATH 030.....	Area B4 (3 units); ELM exempt
Calculus BC*	6.....	MATH 030, 031.....	Area B4 (3 units); ELM exempt
Chemistry.....	6.....	CHEM 030A.....	Area B1 (6 units) & clears B3
Chinese Language & Culture	10.....	CHIN 001A, 001B	Area C2 (3 units)
Computer Science, A#	3.....	CS 046A.....	No GE
Computer Science, AB#.....	6.....	CS 046A, 046B.....	No GE
Economics, Macro.**	3.....	ECON 001A.....	Area D1 (3 units) (SJSU)
Economics, Micro.**	3.....	ECON 001B.....	Area D1 (3 units) (SJSU)
English Language & Composition***	6.....	ENGL 001A.....	Score 3-4 = Area A2 (3 units); EPT exempt
		ENGL 001A, 001B	Score 5 = Areas A2 & C3 (6 units); EPT exempt
English Literature & Composition***	6.....	ENGL 001A, 010.....	Score 3-4 = Area A2 (3 units); EPT exempt
		ENGL 001A, 001B or	Score 5 = Areas A2 & C3 (6 units); EPT exempt
		ENGL 001A, 010.....	A2 & C2 (at student's request) (6 units); EPT exempt
Environmental Science	3.....	Elective credit.....	No GE
French, Literature***	10.....	FREN 001A, 001B.....	Area C2 (6 units)
French, Language***	10.....	FREN 001A, 001B.....	Area C2 (6 units)
Geography, Human	3.....	GEOG 010	Area D1 (3 units)
German, Language	10.....	GERM 001A, 001B	Area C2 (6 units)
Govt & Politics, United States	3.....	POLS 001	Areas D2 (3 units) & clears F2
Govt & Politics, Comp.	3.....	POLS 002	Area D2 (3 units)
History, European	6.....	HIST 010A, 010B	Area D2 (3 units)
History, United States.....	6.....	HIST 020A, 020B	Areas D2 (3 units) & clears F1
History, World	3.....	Elective credit.....	No GE
Italian Language & Culture	10.....	ITAL 001A, 001B	Area C2 (3 units)
Japanese Language & Culture	10.....	JPN 001A, 001B	Area C2 (3 units)
Latin Literature***	6.....	LATN 001A, 001B	Area C2 (3 units)
Latin, Vergil****	6.....	LATN 001A, 001B	Area C2 (3 units)
Music, Theory	6.....	Elective credit.....	Area C1 (3 units)
Physics, B##	6.....	PHYS 002A.....	Areas B1 & B3 (6 units)
Physics, C, Mechanic#..	3.....	PHYS 050.....	Areas B1 (3 units) & clears B3
Physics, C, Elec & Mag##	3.....	PHYS 051	Areas B1 (3 units) & clears B3
Psychology	3.....	PSYC 001	Area D1 (3 units)
Spanish, Language***	10.....	SPAN 001A, 001B	Area C2 (6 units)
Spanish, Literature****	10.....	SPAN 001A, 001B	Area C2 (6 units)
Statistics	3.....	SOCI 015	Area B4 (3 units); ELM exempt
Studio Art, 2D Design	3.....	Elective credit.....	No GE
Studio Art, 3D Design	3.....	Elective credit.....	No GE
Studio Art, Drawing	3.....	ART 024 or 026	No GE

*Students may receive credit for only one math exam.

**Students may receive credit for both Economics exams, but only 3 GE units.

***Students may not receive credit for both English exams.

****Students may not receive credit for both Foreign Language exams in the same language.

#Students may receive credit for only one computer science exam.

##Students receive credit for both Physics C exams, but not B & C.

College Level Exam Program – CLEP

Fall 2008 to Present

Requires score of at least 50 for subject exams (except for Level 2 Foreign Language exams – see below). Students may not receive more than 30 units of CLEP credit.

EXAM	UNITS	COURSE	GE CREDIT (COMMENTS)
Business			
Financial Accounting	3	Elective credit	No GE
Information Systems & Computer Applications.....	3	Elective credit	No GE
Introductory Business Law.....	3	BUS 80.....	No GE
Principles of Management.....	3	Elective credit	No GE
Principles of Marketing.....	3	Elective credit	No GE
Composition and Literature			
American Literature.....	6	Elective credit	No GE
Analyzing & Interpreting Literature	6	Elective credit	No GE
English Composition with Essay.....	6	Elective credit	No GE
English Composition without Essay.....	6	Elective credit	No GE
English Literature	6	Elective credit	No GE
Freshman College Composition	6	Elective credit	No GE
Humanities.....	6	Elective credit	Area C1 & C2 (3 units each)
Foreign Language			
French Language, Level 1	6	Elective credit	No GE
French Language, Level 2*	12	Elective credit	No GE (Requires a score of at least 62)
German Language, Level 1	6	Elective credit	No GE
German Language, Level 2*	12	Elective credit	No GE (Requires a score of at least 63)
Spanish Language, Level 1	6	SPAN 001A	No GE
Spanish Language, Level 2*	12	SPAN 001A, 001B	No GE (Requires a score of at least 63)
*If the student receives credit for Level 2 exam, they may not receive credit for Level 1 exam in the same language.			
History and Social Sciences			
American Government	3	Elective credit	US Const; No GE
History of the U.S. I: Early Colon. to 1877	3	Elective credit	1/2 US Hist; No GE
History of the U.S. II: 1865 to Present	3	Elective credit	1/2 US Hist; No GE
Human Growth & Development	3	HS 015	No GE
Macroeconomics, Principles of	3	ECON 001A	No GE
Microeconomics, Principles of	3	Elective credit	No GE
Psychology, Intro to Educational	3	Elective credit	No GE
Psychology, Introductory.....	3	PSYC 001	No GE
Social Sciences & History	6	Elective credit	Areas D2 & D3 (US Hist)
Sociology, Introductory	3	SOCI 001	Area D1 (3 units)
Western Civilization I: Ancient Near East to 1648**	3	Elective credit	Area D2 (3 units)
Western Civilization II: 1648 to Present**	3	Elective credit	Area D2 (3 units)
**Students may receive credit for both Western Civilization exams, but only 3 GE units.			
Science and Mathematics			
Biology	6	Elective credit	Area B2 (3 units, no lab)
Calculus.....	3	MATH 030	Area B4 (3 units; ELM exempt)
Chemistry	6	Elective credit	Areas B1 (6 units, no lab)
College Algebra	3	Elective credit	Area B4 (3 units; ELM exempt)
College Mathematics	6	Elective credit	Area B4 (3 units; ELM exempt)
Natural Sciences.....	6	Elective credit	Areas B1 & B2 (3 units each, no lab)
Precalculus	3	MATH 019	Area B4 (3 units; ELM exempt)

Proficiency Exam Program (ACT PEP)

Students who present official ACT PEP Exam scores of at least "C" or standard score of at least 50, will be granted up to six semester units of college credit. The number of units granted, course equivalence, and satisfaction of requirements varies. Students may not receive more than 30 units of ACT PEP credit.

Requires a letter grade of at least "C" or a standard score of at least 50 for credit (30 unit maximum allowed).

EXAM	UNITS	COURSE	GE CREDIT (COMMENTS)
Abnormal Psychology.....	No credit		
American Dream (Part I).....	6	AMS 001A.....	.Core C2 (3 units) + D2 (3 units) (no US History, Constitution or Government granted)
Anatomy & Physiology.....	6	BIOL 021.....	.Core B2 (3 units) (no lab)
Foundations of Gerontology.....	6	Elective credit.....	.Core D3 (3 units)
History of Nazi Germany.....	6	Elective credit.....	.No GE
International Conflicts 20th Century	6	Elective credit.....	.Core D2 (3 units)
Microbiology.....	6	Elective credit.....	.No GE
New Rule of Reason.....	6	PHIL 070B.....	.Core C2 (3 units)
Religions of the World.....	6	RELS 070A, 070B.....	.Core C2 (3 units)
Statistics.....	No credit		
War in Vietnam	6	Elective credit.....	.No GE
Business – all exams	No credit		
Education: all exams.....	No credit		
Nursing: Fundamentals.....	6	Elective credit.....	.No GE
Maternal & Child (assoc)	No creditMajor may use results from any nursing test to waive requirement without unit credit toward degree.
Maternal & Child (bacc)	No credit		
Maternity	No credit		
Adult.....	No credit		
Psychiatric	No credit		
Commonalities: Area B	No credit		
Commonalities: Area B	No credit		
Differences: Area A	No credit		
Differences: Area B	No credit		
Differences: Area C	No credit		
Occupational Strategies.....	No credit		
Professional Strategies.....	No credit		
Health Support: Area I	No credit		
Health Support: Area II.....	No credit		
Health Restoration: Area I	No credit		
Health Restoration: Area II	No credit		

International Baccalaureate (IB)

Students who present the following official higher level IB Exam scores of four or better, taken before college matriculation, will be granted up to six semester units of lower division baccalaureate credit. The course equivalence and satisfaction of requirements vary.

Requires score of 4-7 on higher level exams for any credit to be granted. Course equivalence dependent on major advisor for major, minor, or support credit.

EXAM	UNITS	COURSE	GE CREDIT (COMMENTS)
Language A1*	6Area A2 (3 units) if taught in English, score of 6-7 = Area C3 (additional 3 units); Area C2 (3 units) if NOT in English	
Language A2*	6	Elective credit.....Area C2 (3 units)	
Language B*	6	Elective credit.....Area C2 (3 units)	
Spanish A2*	6	SPAN 025B	Area C2 (3 units)
Spanish B*	6	SPAN 025A.....	Area C2 (3 units)
Business & Organization.....	6	Elective credit.....	.No GE
Economics.....	6	ECON 001A,1B	Area D3 (3 units)
Geography	6	Elective credit.....	Area D2 (3 units)
History	6	Elective credit.....	Area D2 (3 units)
History Islamic World	6	Elective credit.....	Area D2 (3 units)
Philosophy	6	PHIL 010	Area C2 (3 units)
Psychology	6	Elective credit.....	Area D1 (3 units)
Social Anthropology	6	Elective credit.....	Area D1 (3 units)
Biology	6	BIOL 010 or 021	Area B2 & B3 (3 units)
Chemistry.....	6	CHEM 030A	Area B1 & B3 (3 units)
Design Technology	6	Elective credit.....	.No GE
Physics	6	Elective credit.....	Area B1 & B3 (3 units)
Advanced Mathematics**	6	Elective credit.....	Area B4, ELM exempt (3 units)
Mathematics Higher Level**	6	Elective credit.....	Area B4, ELM exempt (3 units)
Mathematical Methods**	6	Elective credit.....	Area B4, ELM exempt (3 units)
Art/Design	6	Elective credit.....	Area C1 (3 units)
Classical Languages.....	6	Elective credit.....	Area C2 (3 units)
Computer Science	6	Elective credit.....	.No GE
Music	6	Elective credit.....	Area C1 (3 units)
Theatre Arts.....	6	Elective credit.....	Area C1 (3 units)

*Same language in A1 and A2 or B may not receive credit

** Only one Math exam may be granted for GE credit

Alternative Enrollment Programs

Intrasytem and Intersystem Enrollment Programs

Students enrolled at any CSU campus will have access to courses at other CSU campuses on a space available basis unless those campuses or programs are impacted. This access is offered without students being required to be admitted formally to the host campus and sometimes without paying additional fees. Although courses taken on any CSU campus will transfer to the student's home CSU campus as elective credit, students should consult their home campus academic advisors to determine how such courses may apply to their degree programs before enrolling at the host campus.

There are two programs for enrollment within the CSU and one for enrollment between CSU and the University of California or California Community Colleges. Additional information about these programs is available from the Registrar's Office.

CSU Concurrent Enrollment

Matriculated students in good standing may enroll at both their home CSU campus and a host CSU campus during the same term. Credit earned at the host campus is reported at the student's request to the home campus to be included on the student's transcript at the home campus.

CSU Visitor Enrollment

Matriculated students in good standing enrolled at one CSU campus may enroll at another CSU campus for one term. Credit earned at the host campus is reported at the student's request to the home campus to be included on the student's transcript at the home campus.

Intersystem Cross Enrollment

Matriculated CSU, UC, or community college undergraduate students may enroll on a "space available" basis for one course per term at another CSU, UC, or community college and request that a transcript of record be sent to the home campus. This program is not available to graduate students.

National Hispanic University

San José State enjoys a special relationship with the National Hispanic University of San José, which includes course articulation and major-to-major agreements, cross-registration opportunities for both campuses, and other benefits.

Office of the Registrar
Student Services Center
erecords@sjtu.edu

National Student Exchange

The National Student Exchange is a program for undergraduate exchange within the United States. Instead of crossing oceans, NSE students cross state, regional and cultural borders. The changes seen in attitudes, understanding of other people in other settings, maturity, risk-taking and decision-making are similar to the experiences of students who study internationally.

Visitor Relations and Admissions
Counseling
Student Services Center
408-924-2564
www.nse.org

Over Sixty Program

San José State University has established a permanent program which allows California residents 60 years of age or older to enroll in regular session courses without payment of certain specified fees and with reduction in the levels of others. Applicants interested in this program must be admissible as stipulated in Title 5 of the California Code of Regulations and shall, at time of enrollment, only be able to register during the Late Registration period. Further information is available from the Student Services Center or Educational Counseling in Counseling Services.

Step-to-College

SJSU sponsors a low-cost concurrent enrollment program for area high school students through the Step-to-College program. Offered during Fall, Spring and Summer terms, students must have permission from the school principal and meet all SJSU course prerequisites, including placement exams.

Office of the Registrar
Student Services Center
408-924-2015

Advising and Orientation

In arranging their program each semester, students should follow carefully the outlines of their curricula which are shown in this catalog or are available in the student's major department. Students are urged to consult an advisor in their major department when planning their program of study and selecting courses. Students should bring an unofficial transcript records of all previous college level work, exams, etc. to their advising sessions. All majors in the College of Science, Engineering and Occupational Therapy must be seen by a major advisor prior to registering every semester. Students who do not have a declared major objective (Undeclared) should go to the Student Advising Center in the Student Services Center. All students who need help with General Education requirements should see their major advisor who may refer them to the Student Advising Center. It is highly recommended for students to see advisors prior to registration each semester. All new freshmen are required to attend an Orientation session for information about university requirements, placement in first-semester courses and registration procedures. Transfers are encouraged to attend a transfer information program. In order to register for subsequent semesters, all new students, including Undeclared majors, must see an advisor before the end of their first year. If they do not receive advising, a negative service indicator (hold) will be put on their records preventing them from registering for classes for the third semester. As students attain junior status, they should have prepared a preliminary major and minor form, in consultation with the major advisor.

Major and minor requirements are approved by the chairs of the appropriate departments. Forms are available in department offices.

Change of Major/Degree Objective

Students who wish to change their degree major objectives should obtain a change of major form from the new department in which they wish to major or the Student Services Center. The form requires the approval and signature of the chair of the department of their new major. The completed form must be returned to the Registrar's Office in the Student Services Center. The change of major is not official until the completed form is on file with the Registrar's Office. This form may also be used to move from undeclared to a major; declare a second major, or change a minor. Change of undergraduate major and minor forms are downloadable from www.sjsu.edu/registrar/forms/index.htm.

For graduate change of major, see www.sjsu.edu/gradstudies.

Keep copies of your records, including all transcripts, for your advising sessions.

Exploratory Course

Students who have not decided upon a major, are encouraged to avail themselves of the following course designed to aid them in assessing their abilities and goals and in formulating a decision in their ultimate choice of a major:

EDCO 004. Personal, Academic and Career Exploration

Concepts and applications of personal decision-making. Introduction to life-span human development concepts through the use of self-assessment instruments and procedures. Orientation to San José State University.

3 units.

Orientation

Orientation is an important first step to help freshmen learn to navigate SJSU, register for classes, and make the connections they need to be successful! This mandatory overnight program assists new students with making the transition to college. Orientation is delivered collaboratively by two SJSU departments, Academic Advising Services and Student Involvement. These departments work with new students at Orientation and beyond by utilizing student leaders who are trained in issues of transition. At the program, professional staff advise students about required General Education courses, major courses, and prerequisites. Orientation staff who are knowledgeable about the campus will guide students and parents/guardians through experiences that educate them about campus programs and services.

Transfer Information Program

The Transfer Information Program (TIP) is a one-day program that welcomes new transfers to the campus and includes an introduction to the Colleges and provides critical academic planning information.

Pre-Professional Study

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

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

Pre-Law Programs

Students planning to attend law school and pursue careers in law should be aware that no major has a special advantage in preparing them to compete on the Law School Admission Test or for admission into even the most prestigious law schools. The American Bar Association emphasizes this point in its publication **Law as a Career**: "An undergraduate should be aware that there is no particular course of study that is required or preferred by law schools. Accordingly, students from a wide variety of majors (e.g., philosophy, physics, political science, engineering, and business) are admitted to law schools each year. There is no true prelaw curriculum.

Generally, a broad-based education that is rigorous and that stresses analytical and verbal communication skills will be useful." Students with undergraduate degrees in the humanities and the arts as well as the social, health, and natural sciences are consistently successful in achieving competitive scores on the LSAT and in obtaining admission to law schools of distinction.

However, students should keep in mind that successful pursuit of a career in law depends on skills acquired only through particular kinds of courses. The Law School Admission Council's Official Guide to U.S. Law Schools explains: "While no single curricular path is the ideal preparation for law school, you should choose courses that sharpen analytical reasoning and writing skills. Law schools prefer students who can think, read, and write well, and who have some understanding of what shapes human experience."

Students considering careers in law should consult regularly with a pre-law faculty advisor. The number and kind of courses that prepare students for law can be offered by a variety of departments. It is therefore important that students consult with a faculty member familiar with the curricular choices that best align student aspirations with law school expectations. A faculty advisor can also provide valuable information concerning law school and law careers that will not be acquired through any set of courses. The following departments offer pre-law advising: Justice Studies, Philosophy, Political Science. A further resource for students considering a career in law is the Law School Advisor provided by Student Services.

Pre-Medical Programs

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

Degree Requirements – Undergraduate

Candidates for graduation with a baccalaureate degree must satisfy the regulations described in this section, and those outlined by the major department. The Bachelor of Arts and the Bachelor of Science degrees are offered with majors in the several fields listed under Curricula Offered. In addition to the BA and the BS, the Bachelor of Music (BM), the Bachelor of Fine Arts (BFA), the Bachelor of Nursing (BN) and the Bachelor of Social Work (BSW) degrees are also offered. Specific requirements for degrees in each field are outlined in the departmental sections of this catalog. All candidates for graduation must satisfy the general regulations described on the following pages in this section, as well as those outlined by the major department.

Academic Requirements

An overall average of "C" (2.0) or better, a "C" average or better earned in all units taken at the university, and a "C" average or better in both the major and the minor (if applicable) are required for graduation with a baccalaureate degree. Candidates for teaching credentials must have a total average of better than "C" (see Approval of Candidacy for Teacher Education).

Additional Graduation Requirements

All requirements listed here may be met either by passing waiver examinations, where available, or by coursework. Students should note that success in a waiver examination satisfies a requirement but does not yield unit credit. For information about the examinations, see the Testing Office in the Student Services Center, or call 408-924-5980. Courses which satisfy the requirements are listed under "General Education Requirements and Courses" in the schedule of classes, with the exception of Physical Education activity courses.

American Institutions Requirement

U.S. History, U.S. Constitution, California State and Local Government. State law requires all students graduating from a CSU campus to demonstrate knowledge of these three areas, also referred to as the American Institutions and Ideals, the Title 5, or the "state code" requirement. Students may complete waiver exams or coursework to satisfy the requirements. Consult the "General Education Requirements and Courses" section in the SJSU Schedule of Classes for approved courses or the Testing Office for information about the waiver examinations. Students should consult an advisor to determine which of the various course combinations are best for their degree objectives.

Continuous Attendance and Election of Graduation Requirements

Undergraduate students remaining in attendance in regular sessions at any California State University campus, at any California community college, or any combination of California community colleges and campuses of The California State University may, for purposes of meeting graduation requirements, elect to meet the requirements in effect at the campus from which they will graduate either:

1. at the time the student began such attendance,
– or –
2. at the time of entrance to the campus,
– or –
3. at the time of graduation.

Continuous attendance is defined as enrollment in at least one semester or two quarters in each calendar year. Absence related to an approved educational leave or for attendance at another accredited institution of higher learning is not considered an interruption, providing the absence does not exceed two years.

Campus authorities may authorize or require substitutions for discontinued courses and may also require students changing their major or any minor field of study to complete the major or minor requirements in effect at the time of the change. Students who do not maintain attendance will be held to any new requirements approved by the university at the time of their readmission.

Graduation Requirement in Writing Proficiency

All students must demonstrate competency in writing skills as a requirement for graduation. Information on currently available ways to meet this graduation requirement is listed in the **SJSU Schedule of Classes**.

SJSU students satisfy this requirement by completing a 100W Writing Workshop course. A satisfactory score on the Writing Skills Test (WST) is required either to waive or to enroll in the 100W course designated by the major. Majors which require the 100W as part of the major, however, do not accept the waiver. Information on currently available ways to meet this graduation requirement may be obtained from the Testing Office, the current SJSU Schedule of Classes (<http://info.sjsu.edu/home/schedules.html>) and the Student Services Center.

Graduate students should refer to the section on Competency in Written English.

Double Major

If a student has completed the requirements for two or more majors leading to the same baccalaureate degree for the same graduation application period, those majors shall be acknowledged on a single diploma and on their transcripts. If a student has completed the requirements for two or more majors leading to different baccalaureate degrees for the same graduation application period, both degrees and majors shall be acknowledged on a single diploma and on their transcripts. Each major or formal concentration, not including courses in preparation for or in support of the major, must consist of at least 36 units for Bachelor of Science degree majors, or at least 24 units for Bachelor of Arts degree majors, units that are completely separate and distinct from the other degree or formal concentration.

Minors

A minor may be required or recommended at the option of the major department. A student may also elect to complete a minor. The minimum criterion for **any** minor must be 12 units of course work completely distinct and separate from the course work in one's major. However, courses in preparation for or in support of the major may be included in the minor. Of the courses taken for a baccalaureate minor, 6 units must be upper division; for a teaching credential minor, 12 units must be upper division or graduate. If a minor is completed after a degree has been granted, the minor is not recorded on the student's permanent record.

Physical Education Requirement

It is important that all students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate the needs and interests of SJSU students, the Department of Kinesiology offers a diverse selection of activity courses which have the following goals:

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

All students must complete two units of physical education from two different Kinesiology/Dance activity courses. To challenge the requirement, students must consult the Department of Kinesiology at least one semester prior to graduation.

Kinesiology and Dance activity courses are not repeatable for credit. In addition, only one Intercollegiate Athletics course may be used to fulfill one unit of the physical education graduation requirement.

Residence Requirements

For all bachelor's degrees, including second baccalaureates, a minimum of 30 units shall be earned in residence after matriculation at the campus granting the degree. Twenty-four of these units shall be earned in upper division courses, 12 of the units shall be in the major and 9 units shall be in General Education. Extension credit or credit by evaluation shall not be used to fulfill any of the 30 units. Winter Session for previously matriculated students earns residence credit; Open University units are not applicable toward the residence requirement.

Second or Additional Baccalaureate Degree

Students wishing to work toward a second or additional baccalaureate degree must apply for that undergraduate objective through the regular admission procedure. Second or additional baccalaureate applicants are evaluated on post-baccalaureate admission criteria. Quotas have been established for second or additional baccalaureate students in those degree programs which have undergraduate enrollment restrictions.

The second or additional baccalaureate degree will be awarded when the student has filed for graduation with Undergraduate Evaluations and Graduation and when all major requirements for the degree have been met and a graduation check determines that all university requirements have been satisfied.

To be eligible for the degree, students must complete all coursework which constitutes the second or additional degree in at least two additional semesters with a minimum of 30 units of work beyond the first degree in accordance with the minimum residence requirement. Second or additional baccalaureate degree candidates must meet the academic regulations required of all undergraduate students, including the residency requirement (30 units in residence, 24 of which must be upper division, 12 in the major and 9-12 in Advanced General Education).

Course work completed in the second or additional baccalaureate degree status will be classified as undergraduate work. Students cannot pursue a graduate degree objective and a second or additional baccalaureate degree at the same time at the university.

ACADEMIC SUCCESS TIP

Read

Read the newspaper online or print every day to know what's going on, build your vocabulary, and improve your knowledge of geography, and many other important skills. Reading is a key for becoming an educated person and a lifelong learner.

Special Major

The Special Major is an individually designed course of study leading to a BA or BS degree when academic professional aims are not adequately accommodated by existing university-level San José State University degree majors. The purpose of the Special Major is to give a student with a definite educational objective the opportunity to accomplish that goal. The Special Major is not to be used to bypass either normal graduation requirements or projected programs of the university, nor to complete an existing degree major in which a student might enroll. Students must formally request admission to a Special Major program through the Associate Dean for Undergraduate Studies, Administration Building, Room 159.

In order to be admitted to the Special Major program, the student must have more than one full year of academic work still to be completed to meet minimum degree requirements. Neither lower division nor upper division courses applied to General Education-Breadth requirements are applicable toward the minimum degree major requirements. Minimum residence requirements must also be met. Students must self-identify any disabilities for which reasonable accommodations are necessary to complete the proposed degree program. The student must have both a cumulative and an SJSU GPA of at least 2.75.

Time Limit on Graduation Requirements in the Undergraduate Major

Requirements in the major at San José State University are subject to a time limitation of 10 years. Students are required to meet those requirements in the major in effect no earlier than 10 years prior to receiving the degree. Students with an unusual problem may petition the major department chair for a waiver of the 10-year requirement.

Graduate students should refer to the section on Seven-Year Time Limit on Courses for Graduate Degree Program.

Unit Requirements

A minimum of 120 semester units of credit must be earned for graduation with the baccalaureate degree. Up to 140 units for engineering curricula and up to 132 units for all other Bachelor of Science, Bachelor of Fine Arts and Bachelor of Music degree programs may be required. Normally, no more than four units of Individual Studies (180) and/or Directed Reading (184) may count for the baccalaureate degree. Exceptions must have approval from the major department.

Upper Division Requirements

At least 40 of the total units required for graduation with the bachelor's degree must be upper division. For the BA, a minimum of 12 units of upper division credit in the major is required and for the BS, a minimum of 18 units of upper division credit in the major is required. Upper division credit will be allowed by the university and applied toward the baccalaureate degree only for SJSU courses numbered 100 or above and for courses from other universities clearly designated as junior or senior level courses.

Graduate Credit for Units

Completed as a Graduating Senior

Seniors at San José State University may petition through their major departments to receive graduate credit for units completed in their final undergraduate semester, provided the following conditions are met:

1. No more than 14 semester units are needed to complete a baccalaureate degree at San José State University.
2. None of the courses to be taken for graduate credit is required for the bachelor's degree.
3. The student has at least a 2.5 grade point average in all coursework in upper division standing completed at San José State University.
4. The student agrees to enroll for no more than the maximum load of 15 units for the term in which this work is taken.
5. The student has completed the graduation application check in Evaluations, Student Services Center.
6. The student agrees not to take letter-graded courses for CR/NC when graduate credit is requested.
7. If admitted to a graduate degree program, the student agrees that a maximum of six units of graduate credit earned through this process may be applied toward the master's degree when approved by the appropriate program authority.

"Upper division work" for this purpose is defined as all units after the semester in which the student completes 60 units; however, only work taken at San José State University is used in computing the grade point average.

These units and grade points will not be included in the student's cumulative grade point average after admission to the Graduate Division.

These policies also apply to students in second baccalaureate status. No courses taken while a student is in second baccalaureate status shall be awarded graduate credit unless the student is within fourteen semester units of qualifying for award of the second baccalaureate degree and meets the criteria specified above (including enrollment in all units required for completion of the second baccalaureate degree).

Petitions regarding this matter must: (1) be in writing (form available in Graduate Studies and Research); (2) bear endorsement by the departmental graduate advisor; (3) state the number, title and units of each course to be considered for graduate credit; and (4) be filed in Graduate Studies and Research and acted upon at the beginning of the term in which the units concerned will be earned.

Graduation – Undergraduate Degree

Filing Your Application for Graduation

Candidates for the baccalaureate degree must file an application for graduation at least one semester prior to the expected graduation date with the Student Services Center in order to allow time to make up any deficiencies or correct any discrepancies that may delay graduation. Filing two semesters, or one year, prior to graduation is recommended. At least 90 semester units must be completed before an application for graduation may be submitted. The SJSU *Schedule of Classes* lists the deadlines for filing applications for graduation. In addition to fulfilling curricular graduation requirements, a student, to be eligible for a bachelor's degree, must have a grade point average of at least 2.0 (C) in each one of the following categories: all college work (the overall average), all units attempted at SJSU, all units in the major, and all units in the minor (if any). Majors may require grades of "C" or better in individual courses, or groups of courses, in the major.

Graduation applications for undergraduates are available at the Student Services Center or in the Academic Forms section of www.sjsu.edu/registrar/forms. Students return their completed graduation application forms to the Student Services Center. Major and minor forms are obtained from the departments and forwarded by departments to Undergraduate Evaluations and Graduation.

Baccalaureate majors in the College of Business are required to make application for graduation through the Business Student Advisement Center (BBC 008). Students should refer to the SJSU *Schedule of Classes* for deadline dates.

Graduation forms for master's degree candidates are available in Graduate Studies, Student Services Center. See SJSU *Schedule of Classes* for deadline dates.

Those planning to attend a college or university other than SJSU during the final semester must notify Undergraduate Evaluations and Graduation. Courses must be completed by the date of graduation and transcripts received within one month after graduation or students will be required to submit a date change for the next graduation date.

If a candidate is unable to complete the coursework as expected, or if the date of graduation is to be delayed for any reason, a Change of Graduation form must be submitted, accompanied with the fee, prior to the new expected graduation date.

ACADEMIC SUCCESS TIP

Write

Become a good (or even great) writer. Writing helps you learn, communicate your ideas, and advance your career. Begin with improving your personal e-mails or start a blog.

Conferring Degrees

Degrees are conferred three times a year – in August, December and May – at the close of summer, fall and spring terms. The date of the diploma reflects that session during which the degree requirements were completed. There is one graduation or commencement ceremony each academic year, held at the close of the spring semester. Students who have completed all requirements at any time during the previous year are eligible to participate

Departmental Honors Programs

Students who have completed an approved departmental honors program receive "honors at graduation" as distinct from "university honors at graduation." The following departments offer departmental honors programs (for details see under each department in this catalog).

- Aviation
- Biological Sciences
- Business
- Chemistry
- Child Development
- Computer Science
- Economics
- English
- Environmental Studies
- Geography
- Geology/Earth Science
- History
- Journalism and Mass Communications
- Kinesiology
- Mathematics Computer Science
- Music
- Occupational Therapy
- Political Science
- Psychology
- Sociology
- Theatre Arts

Honors

The university recognizes outstanding academic achievement of its students through:

Honors Convocation

Each spring the Honors Convocation recognizes and encourages superior academic achievement of President's and Deans' Scholars.

There are two levels of Honors Scholars:

President's Scholars: Any undergraduate student who has earned a 4.0 grade point average at San José State University in two consecutive semesters (and summer or winter, if applicable).

Deans' Scholars: Any undergraduate student who has earned a 3.65 or higher grade point average at San José State University in two consecutive semesters (and summer or winter, if applicable).

The minimal load allowed for the award of academic honors is the student's full program of graded courses or 12 units, whichever is the larger. Only SJSU courses for which grades are posted during the consecutive semesters, including the clearance of incompletes made during that time period, shall be used.

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

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

Outstanding Graduating Senior Awards

Announced each year at Commencement by the university president, the Outstanding Graduating Seniors awards recognize exceptional scholarship and service to the university and community based on the following criteria:

1. An overall SJSU GPA of at least 3.75.
2. Significant SJSU leadership (in contrast to titular) in some area(s) of University life, and/or;
3. Significant contributions to the welfare of the University and/or the community, and/or;
4. Other evidence which indicates a high level of intellectual accomplishment and/or personal contribution as an undergraduate.

To be considered for this award, contact the Office of the Vice President for Student Affairs at 408-924-5900.

University Honors at Graduation

Criteria used to determine honors at graduation are those in effect as of the date of graduation.

Summa Cum Laude is awarded to those students achieving a cumulative grade point average in all university and college work and a cumulative grade point average in all work undertaken at SJSU of not less than 3.85.

Magna Cum Laude is awarded to those students achieving a cumulative grade point average in all university and college work and a cumulative grade point average in all work undertaken at SJSU of not less than 3.70.

Cum Laude is awarded to those students achieving a cumulative grade point average in all university and college work and a cumulative grade point average in all work undertaken at SJSU of not less than 3.50.

Graduate and Postbaccalaureate Information

Admission Procedures – Graduate

All graduate and post-baccalaureate applicants (e.g., joint PhD and EdD applicants, master's degree applicants, those seeking educational credentials, and holders of baccalaureate degrees interested in taking courses for personal or professional growth) must file a complete graduate application as described in the graduate and post-baccalaureate admission materials at www.csumentor.edu. Applicants seeking a second bachelor's degree should submit the undergraduate application for admission unless specifically requested to do otherwise. Applicants who completed undergraduate degree requirements and graduated the preceding term are also required to complete and submit an application and the \$55 nonrefundable application fee. Since applicants for post-baccalaureate programs may be limited to the choice of a single campus on each application, re-routing to alternate campuses or later changes of campus choice are not guaranteed. To be assured of initial consideration by more than one campus, it is necessary to submit separate applications (including fees) to each. Applications submitted by way of www.csumentor.edu are preferable. An electronic version of the CSU graduate application is available at www.csumentor.edu. Application forms may also be obtained from the Graduate Studies Office or the Admissions Office of any California State University campus.

Transcript Policy

Transcripts submitted for admission purposes must be official and sent directly from the originating school or college to Graduate Studies and Research, San José State University, One Washington Square, San José, CA 95192-0025. Unofficial transcripts submitted via the student are not acceptable for this purpose. Records submitted become the property of the university and will not be released to the student. If a student does not fully complete an application and actually enroll, the records will be kept on file for one year only and then destroyed.

Graduate or postbaccalaureate applicants must file with Graduate Studies and Research one official transcript from each accredited institution attended by the applicant. Some departments may also require students to file additional transcripts of work completed with the department graduate advisor. Program requirements are located on department websites and can be accessed by clicking on the program name at www.sjsu.edu/gradstudies/Prospective/Graduate_Programs.html.

Individuals currently enrolled in courses at the time of their application for admission are required to complete the "Report of Work-in-Progress" section of the admission application by recording the department course number, course title and units attempted and to file an official transcript of such work when it is completed.

Transferring Graduate Credits from Other Institutions

Students who have completed residence coursework in graduate standing at other accredited colleges or universities may be eligible to apply credit toward master's degree program requirements at SJSU. Note that credits earned through extension divisions in other institutions may not be used toward master's degree programs.

Not less than 80% of coursework required for the master's degree must be completed in residence. For example, a maximum of six units can be transferred and applied to a 30-unit program. Exceptions are granted in advance by petition to the Associate Vice President for Graduate Studies and Research. Graduate transfer work may be applied toward a master's degree program, provided such work is approved by the advisor, included in the program and validated as graduate residence credit by Graduate Studies and Research prior to advancement to candidacy. Transfer coursework must have been completed within seven years of the date of the award of degree from SJSU. Forms to request approval of transfer units may be obtained at Graduate Studies and Research, Student Services Center.

Who Must Apply For Graduate Admission?

Anyone who has never attended San José State University must apply for admission, be formally admitted and enroll in their first classes in their term of admission. Permanent records will be established for them in the Registrar's Office.

Former students who have previously attended San José State University as undergraduate or postbaccalaureate students and have had a break of one or more semesters in their enrollment (not counting summer session) must be readmitted for the term requested.

A graduate of San José State University, whether returning after an absence or continuing immediately after receiving the baccalaureate or master's degree, must also apply for admission.

Currently enrolled Master's, credential or second baccalaureate students changing major and/or degree objective must be readmitted for the term requested. The \$55.00 application fee is waived for applicants enrolled at SJSU the semester prior to the admission term requested.

Admission – Prospective Graduate Students

Students intending to pursue graduate or postbaccalaureate work at San José State University may obtain pertinent information from a variety of sources. Careful reading of several publications will save time and prevent many difficulties which often arise due to lack of information. Publications recommended are:

1. The *SJSU Catalog* – the all-inclusive catalog of regulations and courses offered in the university,
2. The *SJSU Schedule of Classes* – which lists the times of all courses and gives specific information concerning registration

3. Various departmental publications available from department offices and advisors and
4. www.sjsu.edu/gradstudies

The prospective student may also wish to consult an academic advisor. Persons assigned responsibility for advising students in specific graduate programs are listed in various sections of this catalog. Further general information may also be obtained from Graduate Studies and Research, Student Services Center.

Admission Requirements: Graduate and Postbaccalaureate

Graduate and post baccalaureate applicants may apply for a degree objective, a credential or certificate objective, or may have no program objective. Depending on the objective, the CSU will consider an application for admission as follows:

General Requirements – The minimum requirements for admission to graduate and post baccalaureate studies at a California State University campus are in accordance with university regulations as well as Title 5, Chapter 1, Subchapter 3 of the California Code of Regulations. Specifically, a student shall at the time of enrollment: (1) have completed a four-year college course of study and hold an acceptable baccalaureate degree from an institution accredited by a regional accrediting association, or shall have completed equivalent academic preparation as determined by appropriate campus authorities; (2) be in good academic standing at the last college or university attended; (3) have attained a grade point average of at least 2.5 (A=4.0) in the last 60 semester (90 quarter) units attempted; and (4) satisfactorily meet the professional, personal, scholastic, and other standards for graduate study, including qualifying examinations, as appropriate campus authorities may prescribe. In unusual circumstances, a campus may make exceptions to these criteria.

Admission Requirements: Graduate International Students

The CSU must assess the academic preparation of foreign students. For this purpose, "foreign students" include those who hold U.S. visas as students, exchange visitors, or in other nonimmigrant classifications.

The CSU uses separate requirements and application filing dates in the admission of foreign students. Verification of English proficiency (see the section on TOEFL Requirement for undergraduate applicants), financial resources, and academic performance are all important considerations for admission. Academic records from foreign institutions must be on file by the stated deadlines for the first term and, if not in English, must be accompanied by certified English translations. See www.sjsu.edu/gradstudies/Prospective and click on admission deadlines.

Priority in admission is given to residents of California. There is little likelihood of nonresident applicants, including international students, being admitted either to impacted majors or to those majors or programs with limited openings.

Admission Tests: Graduate and Postbaccalaureate

Test Requirements

New graduate students enrolling at SJSU who matriculate with graduate degree objectives may be required to take one or more parts of the Graduate Record Examination (GRE). Students with graduate objectives in Business (MBA, MSTax, MSAcct, MSTmMgt) are required to take the Graduate Management Admission Test (GMAT). Some departments may require a locally developed qualification examination in their subject matter areas. Test requirements can be viewed at www.sjsu.edu/gradstudies/Prospective/Test_Requirements.html and on graduate program web pages.

Applications and information about dates of administration for the GRE and GMAT are available in the Testing Office.

TOEFL Requirement – Graduate and Postbaccalaureate

All graduate and post-baccalaureate applicants, regardless of citizenship, whose native language is not English and whose preparatory education was principally in a language other than English must demonstrate competence in English. Those who do not possess a bachelor's degree from a postsecondary institution where English is the principal language of instruction must receive a minimum score of 550 on the Test of English as a Foreign Language (TOEFL). Some programs require a higher score.

TOEFL All Graduates and Second Baccalaureate applicants

TOEFL Internet-based	80
TOEFL computer-based version	213
TOEFL paper-based	550

English Language Proficiency Test (ELPT)

All Graduates and Second Baccalaureate applicants.....	963
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Graduate – Admission to Candidacy

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 course work as a graduate student in 100- or 200-level courses which are acceptable to the department in which the degree is sought. University 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 the master's degree.

Academic Requirements for Candidacy

At the time the student applies for admission to candidacy for the master's degree, the grade point average for all courses taken after the receipt of the bachelor's degree must be at least 3.0 "B." Lower division courses are not included in the computation.

Graduate Degree Program

After satisfactory completion of any required examinations and attainment of the scholarship criteria as described in the scholarship section, the student and his/her advisor submit the Departmental Request for Approval of Candidacy form containing the graduate degree program. This form lists all courses and other requirements which the student must fulfill to receive the degree. Approval of candidacy deadlines, corresponding to anticipated dates of graduation, may be obtained from Graduate Studies and Research or on the www.sjsu.edu/gradstudies. The proposed program must meet the following requirements:

- Demonstrate competency in written English. See section on Competency in Written English for further explanation.
- The number of units required must be stated; of these, at least half the units must be at the 200-level and a minimum of 60 percent must be letter-graded coursework.
- The complete program may be chosen from within the major department, or it may include combinations of courses drawn from other fields acceptable to the major advisor. If the candidate has deficiencies or lacks prerequisites to enroll in certain courses necessary to the program, he or she will be expected to complete them, usually in addition to the minimum number of units required for the degree. Letter-graded courses from previous graduate degree programs may be included, but they must be less than seven years old at the time the SJSU degree is awarded (see section on transferring graduate credit).
- Not less than 80% of the coursework for the degree shall be completed in residence. For example, a maximum of six units may be transferred and applied to a 30-unit program.

- Courses which may not be used on graduate degree programs are basic skills courses, directed (student) teaching; 300-level residence and 400-level Extended Studies courses taken at San José State University; and units earned through extension or correspondence in other institutions. There is no graduate credit by examination.
- No more than six semester units of combined credit for 298 project and 299 thesis courses may be included or attempted.

The graduate degree program is submitted to Graduate Studies and Research by the posted deadlines for review and approval. The student will be notified by letter of the action taken by the Associate Vice President for Graduate Studies and Research.

Interdisciplinary Studies Major

The MA or MS Interdisciplinary Studies program provides an alternative for graduate students whose desired plan of study does not fit any of the existing graduate degree programs available on this campus. For details see the Interdisciplinary Studies section elsewhere in this catalog.

Official Changes in Graduate Degree Programs

To make official changes (course substitutions) on the graduate degree program, the candidate secures a copy of the form, "Request for Course Substitutions," from Graduate Studies and Research. The candidate enters the numbers and titles of courses to be added and those to be dropped. The master's degree advisor enters recommendations regarding proposed action on the request and forwards the form to the Associate Vice President for Graduate Studies and Research. A completed course may not be dropped from the student's graduate degree program that is listed on an approved candidacy form.

Categories of Graduate Students

Students who meet the minimum requirements for graduate and post-baccalaureate studies may be considered for admission in one of the following categories:

Post-Baccalaureate Classified, e.g. admission to an education credential program

Persons wishing to enroll in a credential or certificate program, will be required to satisfy additional professional, personal, scholastic, and other standards, including qualifying examinations, prescribed by the campus; or

Graduate Conditionally Classified

Applicants may be admitted to a graduate degree program in this category if, in the opinion of appropriate campus authority, deficiencies may be remedied by additional preparation; or

Graduate classified

To pursue a graduate degree, applicants are required to fulfill all of the professional, personal, scholastic, and other standards, including qualifying examinations, prescribed by the campus.

These and other CSU admissions requirements are subject to change as policies are revised and laws are amended. The CSU website www.calstate.edu and the CSU admissions portal www.csumentor.edu are good sources of the most up-to-date information.

Changes in Graduate Objectives

Official changes in graduate or post-baccalaureate objectives are to be initiated in Graduate Studies and Research. A "change of objective" may be one of the following: (a) changing from one graduate program to another graduate program; (b) changing from second baccalaureate standing to graduate/credential standing; (c) changing from graduate/credential standing to second baccalaureate standing, or (d) changing from a credential program to graduate standing. Students in these categories will need to complete the CSU graduate admission application (or undergraduate application for students in category "c") and be processed through regular admission criteria. The \$55.00 application fee is waived for students in category "a" and "d" who are currently enrolled the semester prior to the application term. The \$55.00 application fee is not waived for students continuing immediately after receiving the baccalaureate or master's degree.

Changes within a Graduate Degree Major

Notification of changes from conditionally classified to classified status within the same graduate program are made to Graduate Studies and Research by the graduate program coordinator using a "Change of Classification in Master's Program" form, available from Graduate Studies or downloaded from www.sjsu.edu/gradstudies.

Graduate students must receive classified standing in the graduate program before admission to candidacy.

Exemption from Course Requirements

It is also possible that work already completed at another institution or some type of special preparation may be used to fulfill course content requirements at SJSU.

If approved by the department the candidate may be allowed to substitute alternate courses or special preparation for courses listed as required for completion of that degree. The total unit requirement for the degree will remain unchanged. Course credit by examination is not available to graduate students.

Graduate – Academic Standards

Eligibility

For purposes of determining a student's eligibility to remain at SJSU, both quality of performance and progress toward the student's objective are considered. Such eligibility is determined by units attempted, grade points and the grade point average.

Grade points are assigned as follows:

A, A+ 4.0
A- 3.7
B+, B 3.3
B- 3.0
C+, C 2.7
C- 2.3
D+, D 2.0
D- 1.7
D 1.3
F 0.0
WU 0.
IC 0.0

The grade point average is obtained by dividing the total number of grade points earned by the total number of graded units which the student has attempted. Courses for which the symbols CR, NC, RP, I, AU, W have been assigned do not enter into the grade-point average. The grade point average is cumulative, excluding only lower division (1-99) courses.

Graduate Work in SJSU Special Session and Open University

Special Session classes are offered on a selective basis during the school year. Special Session courses may receive residence credit.

Matriculation may not be required for Special Session courses. Credit earned in 100-, 200-, or 300-level Special Session courses at SJSU are entered on the matriculated postbaccalaureate or graduate student's records as graduate credits, provided the student holds an acceptable baccalaureate degree from an accredited institution at the time of enrollment in the courses. A matriculated postbaccalaureate or graduate student may seek the approval of the program advisor to use these credits to fulfill graduate degree (100- and 200-level only), credential (300-level) or certificate requirements.

Title 5, Education, of the California Code of Regulations permits concurrent enrollment of students in regular session courses (other than supervision courses), which is known as Open University. Policies concerning enrollment for postbaccalaureate or graduate students state:

- Enrollees will be charged the same fees as if the course were offered in other self-supporting university programs.
- Open University enrollments in a given class will be permitted only with the instructor's approval. College dean and Associate Vice President for Graduate Studies and Research signatures may also be required.
- Open University enrollments shall be permitted only after reasonable efforts have been made to provide full enrollment opportunity to regularly matriculated students.

- Open University enrollment in 200-level courses is ordinarily open only to holders of baccalaureate degrees who meet course prerequisite requirements. With the approval of the Associate Vice President for Graduate Studies and Research, qualified last-semester seniors may enroll in 200-level courses through Open University. A disqualified student is not permitted to enroll in 200-level courses. Students who were denied admission into a graduate program at SJSU may not enroll in 200-level courses through Open University. Graduate level courses completed under these conditions cannot be applied to the degree program.

Credits earned in 100-, 200- and 300-level SJSU Open University classes are entered on the matriculated student's record as graduate credits provided the student holds an acceptable baccalaureate degree from an accredited institution at the time of enrollment in the courses. Open University classes do not qualify for residence credit toward a master's degree. However, a matriculated graduate student may seek the approval of the program advisor to apply 100- and 200-level courses to a master's degree program as long as the 80% residence requirement is met.

Students who have enrolled only for Special Session or Open University courses are reminded that they must apply for admission to the graduate program and complete other details of matriculation if they wish to obtain degrees or credentials from SJSU. Students in Special Session degree-seeking programs must designate on the application that they are applying for an off campus program and are limited to Special Session enrollment within a term. Switching a term to allow for Regular Session enrollment requires submission of and approval of a program change request. Enrollment in both Special Session and Regular Session courses within a term requires a special exemption from the Office of Graduate Studies and Research. For further information concerning Special Session or Open University offerings, inquire at International and Extended Studies, 210 North Fourth Street, Suite 301 or call 408-924-2670.

Graduate – Probation

1. Academic Probation

A postbaccalaureate student (that is, a student enrolled in other than conditionally classified or classified graduate status) shall be subject to academic probation if his or her postbaccalaureate grade point average for units attempted at San José State University falls below 1.95. Refer to "Academic Regulations-Undergraduate" for more details.

Credential candidates must consult with their credential advisor to determine the grade point average at which academic probation is imposed.

A graduate student enrolled in a graduate degree program shall be subject to academic probation if a cumulative grade point average of at least 3.0 (grade of "B" on a four-point scale) is not maintained in all units attempted subsequent to admission into the degree program in either conditionally classified or classified status. Courses taken at the lower-division level may be listed on a transcript but may not be used on a graduate program; grades from such courses are not figured into a graduate student grade point average. While the Registrar's Office will make every effort to notify students of their continuing academic status, it is the student's responsibility to continuously monitor their own academic standing.

Graduate students are cleared from probation if the grade point average is corrected to a "B" or better the semester following first notification of probationary status. Postbaccalaureate, credential and graduate students shall be so notified by the university that their probation has been cleared.

2. Administrative – Academic Probation

Section 41300 in Title 5 of the California Code of Regulations permits administrative-academic probation or disqualification from academic programs in the CSU for unsatisfactory scholastic progress regardless of cumulative grade point average or progress points.

A graduate or postbaccalaureate student may be placed on administrative-academic probation by the Associate Vice President for Graduate Studies and Research for the following reasons:

- A. Withdrawal from all or a substantial portion of a program of studies in two successive terms or in any three terms;
- B. Failure to make satisfactory progress toward the graduate or postbaccalaureate objective;
- C. Failure to comply, after due notice, with an academic requirement or regulation which is routine for all students or a defined group of students (examples: failure to take placement tests, failure to complete a required practicum).

Notice of these reasons for administrative-academic probation is provided to the Associate Vice President for Graduate Studies and Research by the coordinator of the graduate or postbaccalaureate program to which the student has been accepted.

When placed on administrative-academic

probation, the student will be notified in writing and will be provided with the conditions for removal from probation and the circumstances which would lead to disqualification, should probation not be removed.

When placed on administrative-academic probation, the student will be notified in writing and will be provided with the conditions for removal from probation and the circumstances which would lead to disqualification, should probation not be removed.

Repeating Courses Taken as Post-Baccalaureate or Graduate Student

A postbaccalaureate or graduate student who wishes to repeat a 100- or 200-level course first taken in postbaccalaureate or graduate standing may do so as follows:

- To repeat a course in which a grade of "C" or better was made on the first attempt: Register through normal procedures. The student's academic record will indicate the course repeated and the grade earned; however, no units or grade points will be earned.
- To repeat a course in which a grade of "D" was made on the first attempt: Register through normal procedures. The student's academic record will indicate the course repeated and the grade earned; units attempted and grade points will be included in the student's cumulative grade point average for purposes of probation and disqualification. However, the student will not earn additional units completed by repeating the course.
- To repeat a course in which an "F" or "NC" grade was made on the first attempt: Register through normal procedures. Each time the course is taken the student will be charged with units attempted and will receive grade points, if earned. Repeating a course in which an "F" grade was received will be counted in the student's program for purposes of probation and disqualification.
- Updating courses: A candidate for the master's degree who wishes to repeat a course for the purpose of bringing it within the seven-year time period for completion of master's degree requirements should see the section on "Seven-year Time Limit on Courses in Graduate Degree Programs." Certain courses, although carrying the same number from term to term, are designed to have significantly different content and may sometimes be repeated for credit. See individual course descriptions.

Graduate students are not eligible for "academic renewal." Only students working for their baccalaureate degree are covered by the university policy on academic renewal.

Graduate – University Disqualification

1. Academic Disqualification

A graduate student who is on academic probation is disqualified if he or she fails to earn better than a 3.0 grade point average each term until the required 3.0 grade point average is again established. This requires enrollment in at least one letter-graded course in each term that the student is on probation.

2. Administrative – Academic Disqualification

Upon notice by the coordinator of the graduate or postbaccalaureate program where the student has been placed on administrative-academic probation, the student may be disqualified from further attendance by the Associate Vice President for Graduate Studies and Research if:

- A. The conditions for removal of administrative-academic probation are not met within the period specified;
- B. The student becomes subject to academic probation while on administrative-academic probation;
- C. The student becomes subject to administrative-academic probation for the same or similar reason for which he or she has been placed on administrative-academic probation previously, whether or not the student is currently in such status.

When administrative-academic disqualification occurs, the Associate Vice President for Graduate Studies and Research will instruct the student regarding possible alternatives to the program for which the student is no longer eligible.

Appeal from University Probation or University Disqualification

Upon receiving notice of probation or disqualification from the University, if there are extenuating circumstances, a student may immediately petition the Admissions and Standards Committee to appeal such action. A Petition for Reinstatement is required in all cases. Petitions for this procedure may be obtained from the Registrar's Office, and the completed forms must be returned prior to the fifth day of the semester.

The critical step in the appeal process is consultation between the student and his or her advisor. A report of the consultation and the advisor's recommendation will be forwarded to the Admissions and Standards Committee.

In cases of extenuation, the student must present evidence of extenuating circumstances beyond his or her control that disrupted previously satisfactory academic performance and that such conditions no longer affect the student's academic work.

After review of the petition, the Admissions and Standards Committee will make a recommendation to the Associate Vice President for Graduate Studies and Research to confirm or rescind action.

Establishing and evaluating the procedure for the appeal process will be the charge of the Admissions and Standards Committee.

Reinstatement Following University Disqualification

Students who wish to be reinstated following disqualification must see their graduate advisor to develop a program of study appropriate to their proposed major for coursework to be taken through San José State University Extended Studies Winter Session or Open University. Courses graded CR/NC are not applicable for reinstatement purposes.

The program of study must consist of a minimum of six (6) units per semester of coursework and should contain only upper division (100-level) courses directly related to the student's major. A disqualified student is not permitted to enroll in graduate (200-level) courses.

Neither extension courses taken from another institution, nor 400-level courses taken from San José State University Extended Studies, nor lower-division courses taken from this or any other institution, are appropriate for reinstatement purposes for a postbaccalaureate or graduate student.

If the academic deficiency occurred in the major field, the program of study during disqualification must include work applicable to the major. If the student who has been disqualified plans to pursue a different degree program upon readmission to the university, then the program of study during disqualification must show whether the student has the capacity to complete the new graduate or postbaccalaureate objective, and must be developed with the graduate advisor for the proposed degree program.

Completion of the program of study does not mean that the disqualified student will be reinstated, only that a petition for reinstatement will be considered. Courses taken for the purpose of achieving reinstatement will not be applicable toward requirements for a master's degree.

After at least one semester has elapsed following disqualification, and after the program of study has been completed, the disqualified student may file a petition for reinstatement with the Admissions and Standards Committee. The petition may be obtained from the Registrar's Office, and must be submitted at least 30 days prior to the first day of the semester in which the student wishes to be reinstated. The Admissions and Standards Committee will review petitions by postbaccalaureate and graduate students following disqualification and will make its recommendations to the Associate Vice President for Graduate Studies and Research. The Admissions and Standards Committee will not recommend reinstatement unless:

- A. The program of study which the student completed during disqualification demonstrates the student's capacity to complete successfully the work contemplated upon readmission to the university,
– and –
- B) The program of study developed with the appropriate graduate advisor was completed with a grade point average of "B+" (3.3) or better in all units attempted. The minimum program of study is two courses totalling six (6) or more units. More units may be required by the advisor.

Petitions for reinstatement will not be accepted from students who have been disqualified from the university more than once. Reinstatement in the university does not assure readmission to a specific degree objective. Disqualified students seeking readmission to the university are subject to the same enrollment limitations and admission application requirements as all other applicants. Application for readmission to the university is required of all students who have not been in attendance for one or more semesters.

After Readmission

A graduate student reinstated following disqualification is normally placed on probation until the San José State University cumulative grade point average is raised to 3.00. The graduate student reinstated on probation must achieve a grade point average better than 3.00 each semester following readmission until such time as he or she has earned a cumulative SJSU grade point average of 3.00. Failure to attain an average better than 3.00 each semester, until a cumulative 3.0 GPA is reached, will result in a second, and final, disqualification.

A postbaccalaureate student readmitted following disqualification is normally placed on probation until the SJSU cumulative postbaccalaureate GPA is raised to 2.0. The student readmitted after probation must attain a GPA above 2.0 each semester after readmission until the cumulative GPA is raised to 2.0. Failure to maintain a GPA above 2.0 until the cumulative GPA is 2.0 will result in a second, and final, disqualification.

Credential candidates are subject to the grade point average requirements dictated by the State Department of Education and will be notified of those requirements by the departments in the College of Education in which they are seeking credential preparation.

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Disqualified International Students

International students must be regular matriculated students admitted to a degree program. Enrollment in Open University does not qualify international students for the immigration document necessary to enter the United States, or to transfer to SJSU from another U.S. university. Disqualified international students are eligible to enroll through Open University but must seek reinstatement to student status from the U.S. Immigration and Customs Enforcement (ICE) agency.

Graduate – Graduation Requirements

Competency in Written English

All graduate students are required to demonstrate their competency in written English as a requirement for graduation. At San José State University, university 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 the master's degree. Students may satisfy this requirement in one of five ways:

- Satisfactory completion of the CSU baccalaureate graduation requirement of competency in written English; or
- Satisfactory completion as a graduate student of the SJSU undergraduate upper division writing requirement by passing the writing workshop waiver examination or completing satisfactorily a writing workshop (100W); or
- Satisfactory completion of a graduate course, which has been approved by the Associate Vice President for Graduate Studies and Research, of at least three units in which a major report is required and that report is at least 30 percent of the course grade. Approved courses are listed at www.sjsu.edu/gradstudies; or
- Approval by the Associate Vice President for Graduate Studies and Research of a professional (peer-reviewed) publication for which the candidate was the sole author; or
- Satisfactory completion of an upper division writing course at another university judged by the Associate Vice President for Graduate Studies and Research to be equivalent in content and writing requirements to the SJSU 100W.

Candidates should be aware that each department may establish its own criteria within these policy guidelines and candidates must abide by the department decision. Graduate Studies and Research will not waive WST.

Completing Requirements for the Master's Degree

After being admitted to candidacy for the master's degree, the student is then required to:

- Maintain a minimum grade point average of 3.0 ("B") in completing requirements in the graduate degree program. This program is defined as completed courses included in the original graduate degree program, plus all additions or substitutions.
- Complete all courses on the graduate degree program with grades of A, B, C, or CR. Grades of C- or lower, including NC, U and WU, are considered to be unsatisfactory. Should courses on the graduate degree program be completed with unsatisfactory grades, these grades must remain on the program and will continue to be computed in the grade-point average of the program. The candidate must petition through the academic advisor to add another course to the graduate degree program with unit value equivalent to that of the course in which the unsatisfactory grade was received.
- Complete an acceptable thesis, project, or comprehensive examination. The thesis (Plan A) or creative project (Plan C) requires that one copy be submitted to the Associate Vice President for Graduate Studies and Research. In Plan B, completed projects are submitted to the student's major department and a final comprehensive oral or written examination over the field of concentration for the degree must be completed successfully. Notification of the exam results is sent to the Associate Vice President for Graduate Studies and Research.
- Complete all work on the graduate degree program within seven years preceding award of the degree. If courses become outdated, the candidate should consult the section titled Seven-year Time Limit on Courses in Graduate Degree Programs in this catalog concerning steps to be followed.
- Apply for award of the master's degree by posted deadline dates. Applications and deadline dates may be obtained from Graduate Studies and Research or at www.sjsu.edu/gradstudies.
- Note that failure to clear incomplete ("I") grades will prevent graduation. An "I" results in an automatic grade change to an "IC" grade, which calculates to an "F" grade on your transcript, even after separation or graduation.
- Be in good academic standing (cumulative 3.0 minimum GPA in Graduate Division) at San José State University to receive a degree from this University.

Failure to Achieve a 3.0 GPA on Completed Graduate Degree Program

If a graduate student does not complete the graduate degree program with a minimum 3.0 ("B") average, the student's major department may (1) terminate the candidacy or (2) permit completing additional courses in an attempt to raise the grade point average on the program to the minimum 3.0. When the student's major department recommends the latter, the additional courses selected must:

- Be at least two new courses at the 200-level, total not less than four semester units, and be graded with letter grades.
- Apply directly to the student's master's degree objective (although they need not be drawn from offerings in the student's major department).
- If the student fails to earn the minimum 3.0 grade point average on completion of the revised graduate degree program, the student's candidacy will be terminated without award of a master's degree.

Final Master's Examinations

It is university policy to require final examinations in master's degree programs in all departments. Departmental requirements for these examinations vary; they may be oral, written or a combination of both. Students following Plans A and C are usually examined primarily over areas of their theses or projects. Plan B students are generally required to demonstrate their competence by writing in a broad field of concentration.

In all cases, it is the candidate's responsibility to register through the departmental coordinator of graduate studies to take all required final examinations. The candidate's advisor and/or the departmental graduate coordinator will be able to supply general information concerning the nature of the examinations and recommended preparation for them.

The master's diploma cannot be transmitted to the candidate until the major department certifies to the Associate Vice President for Graduate Studies and Research, in writing, that all final examinations have been completed satisfactorily. A form for this purpose is available in Graduate Studies and Research or at www.sjsu.edu/gradstudies.

Grading System for Graduate Work

Traditional letter grades are used for all courses taken by postbaccalaureate and graduate students except for field work, thesis, project, individual study and internship courses, which are usually graded credit/no credit. Graduate students do not have the option of choice between the traditional or non-traditional grading system. A grade of Credit in a graduate-level course indicates performance by the student equal to a letter grade of "A" or "B".

The cumulative grade-point average for advancement to candidacy for the master's degree (3.0 minimum) includes all letter-graded work in 100- or 200-level courses for which the student received graduate credit taken after the receipt of the baccalaureate degree, completed within the preceding seven years.

For purposes of probation or disqualification from San José State University, the cumulative grade point average of the postbaccalaureate student is computed by dividing the total number of grade points earned by the total number of graded units attempted at San José State University subsequent to receipt of the baccalaureate degree and enrollment in the Graduate Division. For the graduate student, the cumulative grade-point average for purposes of probation and disqualification is computed by dividing the total number of grade points earned by the total number of graded units attempted at San José State University subsequent to enrollment in the Graduate Division.

Requirements for a Second Master's Degree

Graduate students who have completed one master's degree program at San José State University may, with the approval of the new department, complete requirements for a second master's degree at this institution.

A student who is interested in undertaking a second graduate degree program must apply for admission to the second graduate degree program after the first degree is completed and recorded on the permanent record. All policies and procedures which apply to the completion of the first master's degree apply to the completion of requirements for the second graduate degree.

The graduate degree program for the second degree should be prepared by the student, the advisor and the graduate coordinator in the new field without regard to coursework taken in the previous degree. If the new program happens to include coursework taken in the first degree, a maximum of one-third of the total units required for the new degree may be courses completed in the previous degree at this institution. Thus, for example, a student might be permitted to apply up to 10 units toward a 30-unit program. Such courses, which must be approved by the advisor and graduate coordinator, must have been completed by the student with a grade of "A", "B", or in special cases, "CR". Students enrolling in the Master of Fine Arts program should consult their department regarding acceptance of units earned in a Master of Arts program. Care should be taken to assure that all courses on the first degree program used for the second degree are within the seven-year period for completion of the second degree program.

Requirements for Two Concurrent Master's Degrees

Effective Fall 2007, students may concurrently work towards completion of two different Master's degrees. The student must apply for admission to each degree program. All policies and procedures apply to both programs. In programs requiring a thesis, separate theses are required.

Seven-Year Time Limit on Courses in Graduate Degree Programs

Section 40510(b)(2), California Code of Regulations, Title 5, Education, requires that courses in completed master's degree programs be no older than seven years at the time of the awarding of the degree. This means that no more than seven years may elapse between the time the candidate completes the first course in his/her program and the date the candidate actually completes (not registers for) the last item on the program and completes the degree requirements. With outdated courses the candidate has the following options:

- Request, through the department advisor, that Graduate Studies and Research substitute another course (one already completed or which will be completed in the future) for the one which is outdated; or
- Repeat the outdated course without credit.
- Revalidate the outdated SJSU coursework by examination. No more than 30 percent of a master's degree program may be considered for revalidation (for example, 9 units of a 30 unit program). Permission to revalidate must be authorized by the AVP, Graduate Studies and Research prior to any examination of the course content. The method of examination (written or oral) must be specified in the request to revalidate. Coursework completed at other institutions is not eligible for this revalidation procedure.

It should be emphasized that the seven-year rule applies to courses within the graduate degree program. It is to no advantage to the student to delay seeking approval of degree candidacy to avoid the seven-year limitation.

Veterans who are candidates for graduate degrees and who have had their graduate programs interrupted by military service may petition through the Associate Vice President for Graduate Studies and Research to extend the time limit imposed by the above regulations by the amount of time spent in military service.

The following shows the dates of expiration of courses according to the seven-year limitation:

Courses Taken In	Will Expire In
2001	2008
2002	2009
2004	2011
2005	2012
2006	2013
2007	2014
2008	2015
2009	2016
2010	2017

The seven years is counted from the end of the semester in which the course was completed.

Thesis Requirements

Time is critical during "thesis season." A student must allow enough time for preparation of the draft, consideration by thesis committee members by deadline dates set in departments, typing and the inevitable corrections. Make sure you leave time for the final reading and signing by your committee members; check to see, for example, that all committee members will be in town when you need their signatures. Plan on a minimum of two months for this process, though many departments require more time. Confirm your timeline with your thesis committee members well in advance.

Instructions for master's degree candidates are located at www.sjsu.edu/gradstudies/Current. While these instructions refer to "thesis" throughout, they pertain as well to Creative Project Reports, done under Plan C. Students should consult the departmental project committee to clarify instructions that do not seem appropriate.

These instructions provide general guidance for authors of master's theses at San José State University. Examples of a thesis title page, copyright page, abstract and signature page are provided in the guidelines. Please read the guidelines carefully and consult your advisor concerning any questions you have about the format of your thesis. The major department usually provides more complete format instructions, the interpretation of which rests primarily with the advisor. In rare cases in which the advisor and student require further clarification, Graduate Studies and Research will provide assistance.

Approval of the completed thesis is required for award of the master's degree. Due dates and a copy of the guidelines are at www.sjsu.edu/gradstudies/Current. The thesis copy submitted to the office of Graduate Studies and Research must be the final typed manuscript on regular paper, approved and signed by the thesis committee. The original signature page must meet university requirements (see guidelines).

San José State University participates in the University Microfilm International (UMI) Dissertation Information Service. A student completing a thesis is required to submit one copy of the thesis to the Thesis Coordinator in the Office of Graduate Studies and Research. One extra 150-word abstract and one extra copy of the title page, with your advisor's name, must be attached to the UMI form. Additional information is available at www.sjsu.edu/gradstudies/Current.

The thesis copy, accompanied by appropriate forms and fees, must be submitted to the Thesis Coordinator in the Office of Graduate Studies and Research by the stated deadline.

Checking the Manuscript

The Office of Graduate Studies and Research does not serve as an editor. The author and thesis committee members should carefully proofread the thesis before it is submitted to the Office of Graduate Studies and Research. Such proofreading will usually reveal typographical errors, misspellings, and inconsistencies of style or punctuation. This careful review should prevent the need to make extensive corrections. Graduate Studies and Research will reject a thesis with more than 15 errors and may require department chairperson certification of additional proofreading before accepting a revised manuscript.

Students can prevent rejection of the thesis by ensuring that the final manuscript is free of the following frequent errors: pages for which no numbers are assigned or entered; misspelled words; inconsistencies in style; failure to apply reference style consistently; careless spacing or centering; inconsistencies or inaccuracies in grammar and/or punctuation; inappropriate margins; and incorrect footnotes or bibliography entries.

Neither San José State University nor any of its separate offices nor departments is responsible for matters concerning a student's relationships or agreements with any outside agency or individual. This means that neither the university nor any of its offices will take part in disagreements between students and typists or copy shops concerning thesis preparation services offered or expected, or costs billed or paid.

Details of Plans A, B and C

San José State University has three plans for candidates for Master's degrees as follows:

Plan A – Thesis Plan

This plan requires selection and approval (by advisor and/or candidate's committee) of a thesis topic and its satisfactory production in written, bound form. Plan A requires registration in departmental 299, Master's Thesis.

Plan B – Degree Without Thesis Plan

Plan B is characterized by substitution of certain required courses for the thesis used in Plan A. Plan B in all departments, however, is expected to provide substantial writing and problem-solving experiences, using the tools and techniques of advanced study. When the purpose of Plan B is to provide breadth, rather than specialization, this purpose will be reflected in the selection of courses and in the nature of the final comprehensive examination. Students under Plan B do not register for departmental 299, Master's Thesis, but may be required to register for the departmental 298.

Plan C – Special Plans Including Creative Projects

This plan is reserved for exceptional cases for which needs will be served best through a special arrangement of courses and/or special creative assignments. Such creative assignments may include original paintings, dramatic presentations, motion picture productions, works of sculpture, musical compositions, CD-ROMs, videotapes and similar items. In all cases, the candidate is required to submit a written report on the creative project in the nature of a supplementary guide or handbook. This written report is to be bound and filed in the library in the same manner as regular theses discussed under Plan A. Departmental advisors will provide further information concerning special requirements of this plan. Plan C requires registration in departmental 299.

Thesis/Creative Project Unit Conditions

The time to register for a 299 thesis course is after admission to candidacy for the master's degree. The thesis committee should be determined prior to registering for 299 units and must conform to SJSU Academic Senate policy. All 299 courses are restricted to students who have been admitted to candidacy.

Before collecting any data from human subjects, you must seek prior approval for Human Subjects research from the Institutional Review Board (IRB) (<http://www.sjsu.edu/gradstudies/current/forms>) and for animal research, from the Institutional Animal Care and Use Committee (IACUC) (<http://uac.sjsu.edu>).

A student will be allowed a maximum of six semester units for thesis in Plan A or in Plan C in meeting departmental requirements for the master's degree; some departments use fewer than this number, however. A maximum of six units may be completed in 298 and 299 courses. The student may register for any or all of the required thesis units in his or her graduate degree program in the first semester of thesis registration; in any case, the student must register for the number of units in the graduate degree program prior to receiving a master's degree and may not register for more units of thesis than required. All 299 units will receive a grade of "RP" until a final grade ("CR" or "NC") is awarded.

Final grades for 299 registrations are not given until the thesis has been approved for binding by the Office of Graduate Studies and Research. Upon satisfactory completion of the thesis, a CR grade is submitted by the thesis chair to clear the RP grades for the number of units of 299 appearing on the master's degree approved program.

Required Documentation Submitted with Thesis

Copyright Permission

If you are copying a figure or table, or a significant section of someone else's work, and you believe the use of these copyrighted materials is beyond what is permitted by "fair use," you will be required to submit separate written permission letters from the publisher or author(s) of the works cited, and to indicate in the text after mentioning the source that it was "copied with permission." Plan well, so that such permission letters will be received in time. If you do not submit letters of permission with the final copies of the thesis, Graduate Studies and Research will not approve the thesis and UMI will not microfilm your work.

Include permission letters with the initial submission of the thesis as well as when the thesis is submitted after binding. If you have questions about what material requires permission, contact Graduate Studies and Research.

Human Subjects Data Collection

If your thesis includes data obtained from human subjects (experiments, surveys, interviews, etc.), you must get approval from the SJSU Human Subjects Institutional Review Board (IRB). Information concerning the use of human participants is available at www.sjsu.edu/gradstudies/Current/Forms.html or from the IRB coordinator, 408-924-2479. Human subjects approval must be obtained prior to data collection from SJSU regardless of whether you are doing your research in conjunction with another institution and human subjects approval has been sought there. **Federal law prohibits retroactive approval of human subjects research.** Your thesis will not be approved if it fails to comply with IRB policy.

Once approval has been obtained, you should include a copy of the permission letter with the submission of your thesis. If it is departmental policy or format to include the letter as an appendix to the thesis, that is permitted. Otherwise, a copy of the letter must be submitted as a separate document with the thesis. Failure to submit the appropriate documentation can result in a delay of thesis approval by Graduate Studies and Research.

Animal Research Guidelines

If your thesis includes any experiments, testing or other uses of animals, you must get approval from the SJSU Institutional Animal Care and Use Committee. Information concerning animal care is available from the University Animal Care office, DH 435, 408-924-4924 and online at <http://uac.sjsu.edu>.

Animal care approval must be obtained prior to data collection from SJSU regardless of whether you are doing your research in conjunction with another institution and animal care approval has been sought there. Once approval has been obtained, you should include the permission letter with the submission of your thesis. **Federal law prohibits retroactive approval of animal research.**

If it is departmental policy or format to include the letter as an appendix to the thesis, that is permitted. Otherwise, a copy of the letter must be submitted as a separate document with the thesis. Failure to obtain the necessary approval and submit the appropriate documentation can result in a delay of thesis approval by Graduate Studies and Research.

Final Approval of Your Thesis

To complete the last four steps in the thesis approval process:

1. After your thesis has received final departmental approval and you have obtained departmental signatures, submit the complete thesis with the original signature page and the completed **Thesis Information Form** (www.sjsu.edu/gradstudies/Current) to the Thesis Coordinator for Graduate Studies and Research by the announced deadline date. These deadlines are firm and exceptions are not made.
2. Make sure that you have an extra copy of your thesis. We recommend that an additional "hard" (paper) copy be kept, not just the disk copy, and that you have extra copies of photos, etc.
3. Your thesis will be read and returned to you in one of three ways: accepted, with no corrections; accepted, with corrections; not accepted. You must pick up your thesis (or designate, in writing, another person) when you receive a call or email saying it has been read.
If the thesis is not accepted, you will be instructed to re-submit the thesis within a two week period from the time you are notified for a second review. If the thesis has a number of errors or needs some major format or content revisions, you will need to work with your thesis committee chair in making corrections.
If the thesis is accepted, you will be instructed to submit your final copies for binding along with the original draft of your thesis so that any corrections requested can be verified. If not, you will be required to delay graduation to the next graduation cycle.
4. Turn in all final copies of your thesis, UMI forms/fee(s) and the binding receipt for personal copies to the Graduate Office by the announced binding deadline date.

Fees and Financial Assistance

Cancellation of Registration or Withdrawal from the University

Students who find it necessary to cancel their registration or to withdraw from all classes after enrolling for any academic term are required to follow the university's official withdrawal procedures. Failure to follow formal university procedures may result in an obligation to pay fees as well as the assignment of failing grades in all courses and the need to apply for readmission before being permitted to enroll in another academic term. Information on cancelling registration and withdrawal procedures is available from Registrar's Services.

Students who receive financial aid funds must consult with Financial Aid and Scholarships prior to withdrawing from the university regarding any required return or repayment of grant or loan assistance received for that academic term or payment period. If a recipient of student financial aid funds withdraws from the institution during an academic term or a payment period, the amount of grant or loan assistance received may be subject to return and/or repayment provisions.

For further information, consult the **SJSU Schedule of Classes**, www.sjsu.edu/bursar and www.sjsu.edu/faso.

Fees and Debts Owed to the University

Should a student or former student fail to pay a fee or a debt owed to the institution, the institution may "withhold permission to register, to use facilities for which a fee is authorized to be charged, to receive services, materials, food or merchandise or any combination of the above from any person owing a debt" until the debt is paid (see Title 5, California Code of Regulations, Sections 42380 and 42381).

Prospective students who register for courses offered by the university are obligated for the payment of fees associated with registration for those courses. Failure to cancel registration in any course for an academic term prior to the first day of the academic term gives rise to an obligation to pay student fees including any tuition for the reservation of space in the course.

The institution may withhold permission to register or to receive official transcripts of grades or other services offered by the institution from anyone owing fees or another debt to the institution. If a person believes he or she does not owe all or part of an asserted unpaid obligation that person may contact the business office. The business office, or another office on campus to which the business office may refer the person, will review all pertinent information provided by the person and available to the campus and will advise the person of its conclusions.

For more information or questions, please contact Rosa H. Renaud, Financial Manager, Financing & Treasury in the CSU Chancellor's Office, at 562-981-4570 or rrenaud@calstate.edu.

Failure to pay full registration fees when due or to clear any debt by the given deadline will result in an additional Administrative Fee or cancellation of classes. Also, for failure to respond to university collection efforts, delinquent accounts will be referred to outside collection agencies. Students are responsible for any collection costs that accrue.

Bursar's Administrative Drop Fee

A \$100 administrative penalty fee will be assessed for students that have classes dropped after the census date for non payment of registration fees by the posted deadline. This fee is due regardless if the student re-enrolls within the term.

Fee Waivers

The California Education Code includes provisions for the waiver of mandatory systemwide fees as follows:

Section 68120 – Qualifying children and surviving spouses/registered domestic partners of deceased public law enforcement or fire suppression employees who were California residents and who were killed in the course of law enforcement or fire suppression duties (referred to as Alan Pattee Scholarships);

Section 66025.3 – Qualifying children, spouses/registered domestic partners, or unmarried surviving spouses/registered domestic partners of a war period veteran of the U.S. military who is totally service-connected disabled or who died as a result of service-related causes; children of any veteran of the U.S. military who has a service-connected disability, was killed in action, or died of a service-connected disability and meets specified income provisions; any dependents or surviving spouse/registered domestic partner who has not remarried of a member of the California National Guard who in the line of duty and in active service of the state was killed or became permanently disabled or died of a disability as a result of an event while in active service of the state; and undergraduate students who are the recipient of or the child of a recipient of a Congressional Medal of Honor and meet certain age and income restrictions; and

Section 68121 – Qualifying students enrolled in an undergraduate program who are the surviving dependent of any individual killed in the September 11, 2001 terrorist attacks on the World Trade Center in New York City, the Pentagon building in Washington, D.C., or the crash of United Airlines Flight 93 in southwestern Pennsylvania, if the student meets the financial need requirements set forth in Section 69432.7 for the Cal Grant A Program and either the surviving dependent or the individual killed in the attacks was a resident of California on September 11, 2001.

Students who may qualify for these benefits should contact the Registrar's Office for further information and/or an eligibility determination.

Nonresident Alien Tax Assessment

International students and scholars receiving payments from San José State University must comply with all federal and state tax reporting responsibilities. The Internal Revenue Service requires that SJSU comply with specific federal tax withholding and reporting regulations when making payments to nonresident aliens. Non-U.S. citizens will be required to complete a Foreign National Information Form to assist in the determination of tax residency and applicable tax withholding liability. Payments affected by these IRS rules include, but are not limited to: compensation, wages, honoraria, consulting fees, scholarships, fellowships, stipends, and some reimbursements for travel and other expenses. Questions regarding nonresident alien tax assessment can be addressed by contacting the Human Resources Service Group at 408-924-2250.

Nonresident Students (U.S. and Foreign) Tuition

Nonresident Tuition, in addition to other fees charged all students: \$339 per unit each semester. The total fee paid per term will be determined by the number of units taken, including those in excess of fifteen.

Exemption from Non-Resident Tuition for Certain Students

If you attended high school in California for at least three full years and graduated or earned an equivalent, you may be eligible for resident tuition. Students must file an affidavit with the CSU campus stating that they have filed an application with USCIS to legalize their immigration status or will do so as soon as they are eligible. You will need to show proof of attendance and graduation.

Policy on Dishonored Checks

An individual is not officially enrolled until the university has received full payment of fees. The university has not received payment if personal checks or E-checks are subsequently dishonored by the bank.

Individuals paying registration fees by personal check or E-check are hereby given notice that if their check is dishonored from the bank for any reason, the registration is subject to cancellation. Classes will be purged immediately without prior notification. A \$25.00 fee is charged for the first returned check and \$35.00 thereafter. An additional administrative fee may be charged. The university has no control whether the bank sends checks through a second time for clearing.

All dishonored checks must be redeemed with cash, money order or cashier's check.

More than forty percent of SJSU students receive some form of financial aid, including grants, loans, scholarships and work/study income.

Schedule of Fees, 2007-2008

Legal residents of California are not charged tuition. The following reflects applicable systemwide fees and nonresident tuition for the semester. **Fees are subject to change without notice.** For current fees, see www.sjsu.edu/bursar.

All Students

Application Fee (nonrefundable), payable by check or money order at time application is made: \$55

Units	Per Semester	Per Academic Year
Undergraduate		
0.1 to 6.0	\$804	\$1,608
6.1 or more	\$1,386	\$2,772
Credential		
0.1 to 6.0	\$933	\$1,866
6.1 or more	\$1,608	\$3,216
Graduate		
0.1 to 6.0	\$990	\$1,980
6.1 or more	\$1,707	\$3,414
Doctoral		
0.1 to 6.0	\$3,690	\$7,380
6.1 or more	\$3,690	\$7,380

Mandatory Campus Miscellaneous Fees

Student Association Fee	38.00
Student Union Fee.....	186.00
Facility Fee	23.00
Document Fee	15.00
Instructionally-Related Activity Fee	99.00
Health Fee	75.50
Child Care Fee	8.00
Recreation Fee	6.00
Alternative Transportation Fee.....	21.50
Subtotal.....	\$472.00

Nonresident Students (U.S. and Foreign)

Nonresident Tuition (in addition to other fees charged all students) \$339.00 per unit

The total nonresident tuition paid per term will be determined by the number of units taken. The maximum nonresident tuition per academic year (as of 2006-2007) is \$10,170.

Mandatory systemwide fees are waived for those individuals who qualify for such exemption under the provisions of the California Education Code (see section on fee waivers).

Special or Optional Fees – All students

Semester Parking Permit	\$192.00
Miscellaneous Course Fees/	
Lab Fees	\$5.00 – \$125.00

Estimated Semester Totals – California Residents

Undergraduate 1.0 – 6.0 units	\$1,276.00
Undergraduate 6.1 – or more units	\$1,858.00
Credential 1.0 – 6.0 units	\$1,405.00
Credential 6.1 – or more units	\$2,080.00
Graduate 1.0 – 6.0 units	\$1,462.00
Graduate 6.1 – or more units	\$2,179.00

Procedure for the Establishment or Abolishment of a Student Body Fee

The law governing the California State University provides that fees defined as mandatory, such as a **student body association fee** and a **student body center fee**, may be established. A student body association fee must be established upon a favorable vote of two-thirds of the students voting in an election held for this purpose (Education Code, Section 89300). A **student body center fee** may be established only after a fee referendum is held which approves by a two-thirds favorable vote the establishment of the fee (Education Code, Section 89304). The **student body fee** was established at San José State University by student referendum in the 1930s. The campus president may adjust the **student body association fee** only after the fee adjustment has been approved by a majority of students voting in a referendum established for that purpose (Education Code, Section 89300). The required fee shall be subject to referendum at any time upon the presentation of a petition to the campus president containing the signatures of 10 percent of the regularly enrolled students at the university. Once bonds are issued, authority to set and adjust **student body center fees** is governed by provisions of the State University Revenue Bond Act of 1947, including, but not limited to, Education Code, sections 90012, 90027, and 90068. **Student body association fees** support a variety of cultural and recreational programs, childcare centers, and special student support programs.

The process to establish and adjust other campus-based mandatory fees requires consideration by the campus fee advisory committee and a student referendum. The campus President may use alternate consultation mechanisms if he/she determines that a referendum is not the best mechanism to achieve appropriate and meaningful consultation. Results of the referendum and the fee committee review are advisory to the campus President. The President may adjust campus-based mandatory fees, but must request the Chancellor establish a new mandatory fee.

For more information or questions, please contact Rosa H. Renaud, Financial Manager, Finance & Treasury in the CSU Chancellor's Office, at 562-981-4570 or rrenaud@calstate.edu.

Refund of Fees Including Non-resident Tuition

Regulations governing the refund of mandatory fees, including nonresident tuition, for students enrolling at the California State University are included in Section 41802 of Title 5, **California Code of Regulations**.

For purposes of the refund policy, mandatory fees are defined as those systemwide fees and campus fees that are required to be paid in order to enroll in state-supported academic programs at the California State University. Refunds of fees and tuition charges for self-support programs at the California State University (courses offered through extended education) are governed by a separate policy established by the University.

In order to receive a full refund of mandatory fees, including nonresident tuition, a student must cancel registration or drop all courses prior to the first day of instruction for the term. Information on procedures and deadlines for canceling registration and dropping classes is available in the SJSU Schedule of Classes (<http://info.sjsu.edu/home/schedules.html>).

For state-supported semesters, quarters, and non-standard terms or courses of four (4) weeks or more, a student who withdraws during the term in accordance with the university's established procedures will receive a refund of mandatory fees, including nonresident tuition, based on the portion of the term during which the student was enrolled. No student withdrawing after the 60 percent point in the term will be entitled to a refund of any mandatory fees or nonresident tuition.

For state-supported semesters, quarters, and non-standard terms or courses of less than four (4) weeks, no refunds of mandatory fees and nonresident tuition will be made unless a student cancels registration or drops all classes prior to the first day in accordance with the university's established procedures and deadlines.

Students will also receive a refund of mandatory fees, including nonresident tuition, under the following circumstances:

- The tuition and mandatory fees were assessed or collected in error;
- The course for which the tuition and mandatory fees were assessed or collected was cancelled by the university;
- The university makes a delayed decision that the student was not eligible to enroll in the term for which mandatory fees were assessed and collected and the delayed decision was not due to incomplete or inaccurate information provided by the student; or
- The student was activated for compulsory military service.

Students who are not entitled to a refund as described above may petition the university for a refund demonstrating exceptional circumstances and the chief financial officer of the university or designee may authorize a refund if he or she determines that the fees and tuition were not earned by the university.

Information concerning any aspect of the refund of fees may be obtained from the Bursar's office.

Parking Permit Refunds

Parking permits are refunded based upon the date the permit is returned to Parking Services (see **Schedule of Classes** (<http://info.sjsu.edu/home/schedules.html>)).

Credit Cards

- Credit cards are not accepted in person at the Bursar's Office windows.
- You must logon to MySJSU and select the link to pay with a credit card.
- There is a 2.75% service charge for paying with a credit card.
- SJSU accepts MasterCard, American Express, and Discover/Novus cards.



General Education Program

What is the General Education Program?

A university brings together many separate areas of learning, yet it is more than just a collection of specialized disciplines. The SJSU General Education Program incorporates the development of skills, the acquisition of knowledge, and the integration of knowledge through the study of facts, issues, and ideas. Regardless of major, all who earn undergraduate degrees should share common educational experiences, as they become university scholars. In combination with major, minor, and elective courses, the General Education curriculum should help students attain those attributes found in an educated person.

General Education Program Objectives

Students who complete the General Education curriculum should be able to demonstrate:

- a broad understanding of the sciences, social sciences, humanities, and the arts;
- an ability to communicate ideas effectively both in speaking and in writing;
- the capacity for critical and creative thinking;
- an understanding of ethical choices inherent in human development;
- an ability to assess information (information literacy);
- an ability to address complex issues and problems using disciplined analytic skills and creative techniques;
- multi-cultural and global perspectives gained through intellectual and social exchange with people of diverse backgrounds and experiences;
- the characteristics of "intentional learners" who can adapt to new environments, integrate knowledge from different sources, and continue learning throughout their lifetimes; and
- the capacity to participate as a socially responsible member of civic, professional, cultural, and other communities.

The advancement of academic discourse requires civility and a respectful attitude toward all in the expression and consideration of a variety of viewpoints. All courses shall reinforce the ethical responsibility of students and instructors to acknowledge respectfully the learning styles and forms of expression of individuals and members of all groups.

More Information about GE

Students with questions or problems with their General Education requirements must consult an advisor in their major department. If necessary, the academic major advisor may refer the student to the Student Services Center.

Distribution of Requirements

Students who began continuous enrollment in Fall 1991 or later at a California Community College or other California State University must follow requirements described here.

Core GE 39 units

Basic Skills (A)

Oral Communication.....	3
Written Communication IA.....	3
Critical Thinking.....	3

Science (including lab) and Mathematics (B)

Life Science.....	3
Physical Science.....	3
Mathematical Concepts.....	3

Humanities and the Arts (C)

Arts	3
Letters	3
Written Communication IB	3

Social Science (D)

Human Behavior.....	3
Comparative Systems.....	3
Social Issues	3

Human Understanding and Development (E)

3

SJSU Studies 12 units

Earth and Environment (R).....

3

Self, Society and Equality in the U.S. (S).....

3

Culture, Civilization and Global Understanding (V).....

3

Written Communication II (Z)

3

American Institutions

(may also satisfy core GE areas) 6 units

American History (F1).....

3

U.S. Constitution and California Government (F2-3)

3

ACADEMIC SUCCESS TIP

Identify and use the resources available to you

Talk to your professors. Visit them during office hours to introduce yourself, ask questions about the course, your major, careers, graduate school, and campus events. Know when to ask for help. Follow through by meeting with your professor or teaching assistant, or joining a study group. Go to the Learning Assistance Resource Center (LARC) and seek out a tutor. Seek help from Counseling Services or check out the Peer Mentor Center, or ask for help from friends.

General Education Requirements

1. All students must complete 51 units of approved GE courses with letter grades. If a requirement is waived without unit credit, additional approved GE courses must be taken to complete a minimum of 48 GE units.
2. All three areas described below must be completed by all students: Core GE (39 units), SJSU Studies (12 units) and American Institutions (0-6 units).
3. Transfer students may satisfy all Core GE by completing an Intersegmental GE Transfer Curriculum (IGETC) or a CSU 39-unit breadth certification prior to transfer. Second baccalaureate students satisfy Core GE with their first baccalaureate.
4. All students must satisfy SJSU Studies at SJSU regardless of GE completed at other institutions. Exception: Written Communication II may be satisfied prior to transfer, unless also specified as a course requirement in the major.
5. If a course is listed as a sequence (AB), the entire sequence must be completed to satisfy the requirement.
6. Written Communication, Mathematical Concepts, Critical Thinking and Oral Communication courses require a minimum grade of "C."
7. To find approved courses, check the GE designator listed for the requirement. This designator is printed by each GE class section in the SJSU Schedule of Classes.
8. All GE courses must be on the approved list of the California Community College (CCC), California State University (CSU) or University of California (UC) for CSU Breadth Requirements or the Intersegmental General Education Transfer Curriculum (IGETC) where and when the course is taken.
9. The following GE courses require prerequisites to enroll:
 - Written Communication IA and IB: Satisfaction of the English Placement Test (EPT) requirement
 - Mathematical Concepts: Satisfaction of the Entry Level Math Test (ELM) requirement
 - SJSU Studies: Writing Skills Test (WST)
See the SJSU Schedule of Classes or this catalog for additional information about these tests.
10. Complete information on specific requirements and approved courses is found each semester in the SJSU Schedule of Classes.

General Education Requirements

Prior to Fall 1991

Students who began continuous enrollment at a California Community College or California State University prior to Fall 1991 should consult the Student Services Center for appropriate requirements and courses.

Students who began continuous enrollment between Fall 1991 and Fall 1993 and entered San José State University prior to Fall 1993, are also eligible for the Prior to Fall 1991 requirements.

Leave of Absence and Withdrawal

Withdrawal from the University

Students may withdraw officially from all courses during the first fourteen days of instruction without academic penalty (no "W" grade on academic record).

Students who have serious or compelling reasons to cancel their registration, or who wish to withdraw from all classes after the last day to drop without a "W" grade, should consult their instructors, department chair, academic advisor, and Academic Advising and Retention Services in the Student Services Center. An additional source of assistance is available from Counseling Services in the Administration Building.

A completed "Withdrawal from the Semester Request" form must be submitted to Academic Advising and Retention Services in the Student Services Center. The form is available at www.sjsu.edu/registrar/forms/index.htm. Failure to follow formal university procedures may result in an obligation to pay fees as well as the assignment of failing grades in all courses. Students who leave the university but who do not officially withdraw will receive a grade of "WU" (denotes failure for unauthorized drop or withdrawal) in all of their classes. No personnel actions, grades, or transcript services will be permitted until all financial obligations, such as unpaid fines have been settled. If a student fails to return the semester immediately following withdrawal, the student will need to reapply for admission at www.csumentor.edu.

Students who receive financial aid funds must consult with the Financial Aid and Scholarship office prior to withdrawing from the university regarding any required return or repayment of grant or loan assistance received for that academic term or payment period. If a recipient of student financial aid funds withdraws from the institution during an academic term or a payment period, the amount of grant or loan assistance received may be subject to return and/or repayment provisions.

Refer to the policy on "Continuous Attendance" for information about the possible effect a break in attendance may have on requirements for graduation.

Health Leave

Matriculated undergraduate or graduate students unable to continue their enrollment by reason of health are eligible for health leave. A student granted health leave retains continuing student status and may return as a continuing student without a new application or application fee and without being subject to changes in requirements made during the period of leave.

A Leave Request form needs to be completed with appropriate signatures to the Registrar's Office in the Student Services Center. A leave form should be submitted to the chair of the student's major department. Undeclared undergraduates, must submit the form to Academic Services. A certificate from a licensed State of California health professional will normally be required.

A health leave shall not be granted initially for more than two consecutive semesters, but may subsequently be extended if the department chair is satisfied that circumstances so warrant. A request for extension shall be made in the same manner as the initial application.

A student granted health leave during a semester in which he or she is registered for classes is eligible for Incomplete ("I") grades if permitted by university policy. If Incomplete ("I") grades are not permitted or appropriate, grades of "W" shall be recorded.

It is the responsibility of students intending to return after health leave to notify the Registrar's Office as far as possible in advance of the semester of return. If timely notice is given, the student shall be allowed to register through the regular procedure.

Leave Request forms and information are available at the Student Services Center and are downloadable from www.sjsu.edu/registrar/forms/index.htm.

Leave for International Students

International students may not take leave and remain in the United States except for documented medical reasons. International students must be enrolled in a full course of study (12 credit units for undergraduate students; 9 credit units for graduate students) for two semesters annually. They are not required to register for summer or winter breaks, but may do so if they so desire.

Military Leave

Students who are called to active duty may request a Military Leave. A Leave Request form with a copy of military orders must be submitted to the Registrar's Office. The form is available in the Student Services Center and is downloadable from the Registrar's website at www.sjsu.edu/registrar/forms/index.htm.

One Semester Leave

Students who have attended at least one semester as a matriculated student and who are in good or probation standing may choose to leave SJSU for one semester (Fall or Spring) without submission of a Leave of Absence form. Students choosing this option must return the following semester and continue their enrollment as a matriculated student. If a student does not return in the semester following the one semester leave, the student will be required to reapply for admission to the next available admission term. Students utilizing this option may not submit a formal leave of absence following the one semester leave. Please review the Returning Student section for additional information.

Students who engage in college coursework outside of SJSU during the one semester leave period will be required to submit official academic transcripts prior to course enrollment.

Planned Student Educational Leave

A Planned Student Educational Leave permits a student to be absent from regular attendance for one or more terms while maintaining continuing enrollment status. Applicants must have an intention to return to formal study within a specified period and a plan for how the time is to be spent in relation to an educational objective.

The opportunity to apply for such leave is available to all students except those attending their first semester (or a first semester after an absence) and those students in disqualified status. International students are not eligible to remain in the United States while on a leave of absence unless such a leave is documented by an attending physician, and authorized by the International Programs and Services Office at SJSU.

Leave arrangements must be made in advance with the chair of the department in which the student is majoring. Undergraduate students in undeclared status will make leave arrangements with Academic Services in the Student Services Center. Graduate students will make leave arrangements with the graduate program coordinator in their department. International students must also go to the IPS office to secure the necessary immigration authorizations. The maximum leave is four semesters.

Students who meet the terms of the leave are guaranteed a return to their department even though it is or becomes a program restricting the number of applicants. However, students who return to SJSU in a chancellor-designated impacted major are subject to readmission consideration based on meeting the supplementary admission criteria required of all applicants seeking entrance to those fields of study.

Leave forms and additional information may be secured from the Student Services Center.

Readmission

Disqualified Students

A. Students disqualified from San José State University who wish to be considered for readmission should:

1. Read the section of this catalog titled Disqualification and Probation.
2. Contact the Student Services Center regarding readmission forms, procedures and submission of appropriate transcripts.

Approval for readmission to the University after disqualification does not assure readmission to any particular semester or specific degree objective.

B. Students who have been disqualified from the college or university of last attendance (other than SJSU) will not be considered for admission to a regular session until:

1. The official transcript of record indicates eligibility to re-enroll, or
2. They have (a) completed a minimum of twelve (12) semester hours of university level work with at least a 2.0 ("C") average in units completed since disqualification and (b) met all other academic requirements for admission to SJSU.

Former Students in Good Standing

Students who left the university in good standing may be readmitted provided any academic work attempted elsewhere since the last attendance does not change their scholastic status. Transcripts of the record of any college work attempted in the interim are required.

Former Students Who Were Disqualified

Students disqualified at the close of their last enrollment must petition for reinstatement. See the section titled Disqualified Students for detailed information. Students seeking reinstatement to the university are also advised to make early application for readmission. Contact the Student Services Center for details, or read the Petition for Reinstatement information on www.sjsu.edu/registrar/forms/index.htm.

Former Students Who Were On Probation

Students on probation at the close of their last enrollment may be readmitted on probation provided they are otherwise eligible. Students must furnish transcripts of any college work taken during their absence.

Returning Students

Students who are officially registered, have paid registration fees and who then withdraw officially are considered continuing students and are not required to file an application for admission to the following regular semester.

Former students in good standing who plan to return after an absence of more than one semester must submit a new admission application at www.csumentor.edu. The application fee is required if they were not enrolled in either of the two semesters prior to the semester in which they are seeking admission or if they were enrolled in another institution during their absence from the university. Students who maintain continuous attendance are not exempt from readmission requirements after an absence of more than one semester.

Former students absent from the university for a period of seven or more years must resubmit all documents required for admission.

Registration

Refer to each semester's Schedule of Classes for deadlines, policies, and procedures section and specific registration information. All students are expected to register at <http://my.sjsu.edu>.

Registration Access

Make sure you have working access to <http://my.sjsu.edu>

Make sure your browser (Explorer, Firefox, Safari, etc.) will work at MySJSU. Current browser standards are posted.

For your convenience, broadband computer access locations are available at these campus locations:

- King Library
- Associated Students Computer Lab, Student Union
- Lobby, Student Services Center
- Learning Assistance Resource Center (LARC), Student Services Center
- Campus wireless hotspots

SJSU ID and User ID

- MySJSU uses your nine-digit SJSU ID for logging in. This is the number found on the back of your Tower Card. Students who were previously issued a User ID beginning with a capital W may continue to log in with that; however, the SJSU ID will also work.
- Your ID can not be changed.
- New students receive this information from admission office communications.

Appointments

Do your research and plan your schedule. Check your enrollment appointment at <http://my.sjsu.edu>. You will not be able to register before your appointment time, but you can enter the system and research course offerings, degree requirements, course prerequisites, etc. It is your responsibility to monitor your account to see when the appointment time is posted. Note that enrollment appointments are not mailed to students.

Adding Classes on the First Day of Instruction

On the first class meeting, graduating seniors (defined as those who are scheduled to graduate at the close of the semester for which they are registering) who have met the prerequisites listed in the university catalog, shall have top priority for any available spaces. Students seeking to add the course should provide their Graduation Worksheet showing that they are graduating seniors as defined above.

An impartial procedure (such as a lottery or any other method of random selection) shall be used to choose, from among the graduating seniors, those who will fill the available spaces.

— Academic Senate Policy S-93-7

Course Offerings and Cancelled Classes

The courses listed in the **SJSU Schedule of Classes** reflect the scheduled offerings by the departments available at the publication deadline. The online schedule of classes posted at MySJSU provides real time status of classes. Departments have the option, based on enrollment, to cancel and/or add sections or courses.

Dropping Classes After the Fourteenth Day of Instruction

1. After the Schedule Adjustment period, dropping a course is permissible only for serious and compelling reasons. Unsatisfactory performance in coursework is not a serious and compelling reason in itself for requesting permission to drop. Late Drop requests must be received in Academic Services no later than the last day of instruction.
2. Permission to withdraw from courses during this period may be granted only with the approval of Academic Services. Withdrawal from the semester forms are available at the Student Services Center.
3. Students who have officially dropped a course in which they are enrolled, or who have had a withdrawal approved, will receive the symbol "W".
4. If the student qualifies, the thirteenth week of instruction is the beginning date for instructors to give "Incomplete" grades. Instructors may award an Incomplete grade to a student who has completed the majority of course requirements, but who encounters extenuating circumstances that prohibit full completion. A contract for completion of the Incomplete grade within one year should be filed in the department office.

An unofficial drop is one in which a student stops attending classes without filing the appropriate forms, whether it is a Late Drop form or a Withdrawal from the Semester, within the established deadlines. Students receive a "WU," which is computed as an "F" for grade point purposes, when they unofficially drop (stop attending) class. Students who have dropped a class unofficially and have therefore received a grade of "WU" may be eligible for Academic Renewal.

Retroactive Course Drop requests may be submitted after the semester has ended. Requests for a retroactive drop of a specific course are not granted unless the student shows extenuating circumstances beyond his or her control that prevented the student from dropping the course.

Dropping Without Penalty

Courses may be added or dropped without penalty during the first fourteen days of classes. See the **Schedule of Classes** for exact dates and deadlines. Courses dropped during this initial period will not appear on the student's transcript. With instructor consent, students may late add a class up to one week later (see current **Schedule of Classes**).

"Instructor Consent" or "Department Consent"

Should you receive a registration error indicating that "**Instructor Consent**" is required, you must go to the instructor to obtain the Permission number. To add the course, use the **Permission Number** with the Class Number for that specific course section, as listed in the course schedule.

"Department Consent" requires students to go to the department that offers the course to obtain the Permission Number. To add the course, use the Permission Number with the Class Number for that specific course section, as listed in the course schedule.

Permission numbers become 'used' only after an enrollment request is successful. To assure a successful enrollment request if you are adding using a permission number, remember the following before clicking the submit button:

Remember the following before clicking the submit button:

- Check that you have no holds.
- Check that you have met all prerequisites.
- Only enter the enrollment section in the class number section.
- Enter any and all Component Courses (e.g., corequisite labs or seminars) and determine what required course is approved even before trying to "Enroll in the Class."

To enroll if you submitted a number but received an error, **re-enter the same permission number after resolving the error.**

Instructor Drops

Instructors are permitted to drop students who fail to attend the first scheduled class meeting and who fail to inform the instructor prior to the second class meeting of the reason for any absence and their intention to continue in the class. Some instructors will drop students who do not meet the stated course prerequisites. However, they are not required to do so. **It is the student's responsibility to make sure classes are dropped.**

Late Registration Fees Assessed

Students registering for classes after the term begins are assessed a late registration fee. Students in the Over 60 and Step to College programs are not required to pay the late registration fee.

AMOUNT DESCRIPTION

\$25.00	Begins the first day of instruction for initial enrollment within the term
\$45.00	Begins after late registration deadline and before census for any classes added
\$150.00 ...	Begins after census for any classes added
\$200.00 ...	Begins the first day after instruction ends (Study Day)
\$50.00	Occurs when classes are administratively dropped by the Bursar's Office Drop for non-payment and student wishes to re-enroll the following term
\$100.00 ...	Occurs when classes are administratively dropped by the Bursar's Office Drop for non-payment and student wishes to re-enroll within the same term

Registration Restrictions

Students Restricted from Registering During Advance Registration

- **Matriculated SJSU students cannot concurrently enroll in Open University.** Matriculated students are those who have been admitted to SJSU as regular students for the current semester or were registered as matriculated students in at least one of the two previous semesters and did not graduate. This policy does not apply to disqualified students.
- **Students returning after an absence:** After an absence of more than one semester (without a formal leave of absence), students must reapply for admission before access to registration is granted.

Registration Holds

Students should **periodically check for "holds"** at <http://my.sjsu.edu>. Follow the instructions on how to clear them.

Monetary holds of \$200.00 or more will block you from registration, obtaining official transcripts and other miscellaneous services.

Repeating a Class

During Advance Registration you may not register for a class in which you have previously been enrolled unless that class may be taken multiple times for credit. If you wish to repeat for the purpose of improving your grade, you must wait until Late Registration and you will need a Permission Number from the instructor to add.

Students in Math and English Remediation

- Students in Math or English remedial status are restricted from enrolling in certain classes. Go to www.math.sjsu.edu/%7EMcClory/ and click on the EO 665 Handbook for more information.
- Students in Math or English remedial status based on ELM/EPT scores will be required to remain enrolled in their assigned developmental Math and/or LLD class except during summer term.
- Students who do not enroll or who drop out of the assigned developmental class(es) during any registration period for fall or spring terms will be subject to having all courses dropped. If this occurs, students must re-register for courses and there is no guarantee that classes in which they were previously enrolled will be available.

Writing Skills Test (WST)

Are you planning on taking an SJSU Studies General Education course?

Are you planning on taking a 100W course outside of your major?

You must pass the WST in order to register for any SJSU Studies (formerly Advanced GE) General Education class. This is true even if you want to take the class for a major requirement, instead of GE. If you have not yet taken the WST, plan to take it as soon as possible. Check the General Education Section in this schedule for an explanation.

There are designated 100W classes for each major. Clear any substitutions with your major advisor before attempting to register for a 100W class that is not assigned to your major. You will need to wait until the first day of instruction to sign up for a 100W class that is not designated for your major.

Residency

Determination of Residence for Nonresident Tuition Purposes

University requirements for establishing residency are independent from those of other types of residency, such as for tax purposes, or other state or institutional residency. A resident for tuition purposes is someone who meets the requirements set forth in the Uniform Student Residence Requirements. These laws governing residence for tuition purposes at the California State University are California Education Code sections 68000-68090, 68120-68134, and 89705-89707.5, and California Code of Regulations, Title 5, Subchapter 5, Article 4, sections 41900-41916. This material can be viewed on the Internet by accessing the California State University's website at www.calstate.edu/GC/resources.shtml. These regulations were promulgated not to determine whether a student is a resident or nonresident of California, but rather to determine whether a student should pay University fees on an in-state or out-of-state basis.

Each campus's Admissions Office is responsible for determining the residence status of all new and returning students based on the Application for Admission, Residency Questionnaire, Reclassification Request Form, and, as necessary, other evidence furnished by the student. A student who fails to submit adequate information to establish eligibility for resident classification will be classified as a nonresident.

Generally, establishing California residence for tuition purposes requires a combination of physical presence and intent to remain indefinitely. An adult who, at least one full year prior to the residence determination date for the term in which enrollment is contemplated, can demonstrate both physical presence in the state combined with evidence of intent to remain in California indefinitely may establish California residence for tuition purposes. A minor normally derives residence from the parent(s) they reside with or most recently resided with.

Evidence demonstrating intent may vary from case to case but will include, and is not limited to, the absence of residential ties to any other state, California voter registration and voting in California elections, maintaining California vehicle registration and driver's license, maintaining active California bank accounts, filing California income tax returns and listing a California address on federal tax returns, owning residential property or occupying or renting an apartment where permanent belongings are kept, maintaining active memberships in California professional or social organizations, and maintaining a permanent military address and home of record in California.

Non-citizens establish residence in the same manner as citizens, unless precluded by the Immigration and Nationality Act from establishing domicile in the United States.

Exceptions to the general residence requirements are contained in California Education Code sections 68070-68084 and California Code of Regulations, Title 5, Subchapter 5, Article 4, sections 41906-41906.5, and include, but are not limited to, members of the military and their dependents, certain credentialed employees of school districts and most students who have attended three years of high school in California and graduated or attained the equivalent. Whether an exception applies to a particular student cannot be determined before the submission of an application for admission and, as necessary, additional supporting documentation. Because neither campus nor Chancellor's Office staff may give advice on the application of these laws, applicants are strongly urged to review the material for themselves and consult with a legal advisor.

Nonresident students seeking reclassification are required to complete a supplemental questionnaire including questions concerning their financial dependence on parents who cannot satisfy University requirements for classification as residents for tuition purposes, which will be considered along with physical presence and intent in determining reclassification.

Appeals

Students classified as non-residents may appeal a final campus decision within 120 days of notification by the campus. A campus residence classification appeal must be in writing and submitted to:

The California State University
Office of General Counsel
401 Golden Shore, 4th Floor
Long Beach, CA 90802-4210

The Office of General Counsel can either decide the appeal or send the matter back to the campus for further review.

Students incorrectly classified as residents or incorrectly granted an exception from nonresident tuition are subject to reclassification as nonresidents and payment of nonresident tuition in arrears. If incorrect classification results from false or concealed facts, the student is subject to discipline pursuant to Section 41301 of Title 5 of the California Code of Regulations.

Resident students who become nonresidents, or who no longer meet the criteria for an exception, must immediately notify the Registrar's Office.

Changes may have been made in the rate of nonresident tuition and in the statutes and regulations governing residence for tuition purposes in California between the time this information is published and the relevant residence determination date. Students are urged to review the statutes and regulations stated above.

Residence Determination Dates

At San José State University, the residence determination dates are:

Fall – September 20

Spring – January 25

Summer – June 1

Determination Dates – CalStateTEACH

The residence determination dates for the four stages on CalStateTEACH are:

Stage 1 – September 20

Stage 2 – January 5

Stage 3 – June 1

Stage 4 – September 20



Student Rights

Information Resources

Institutional Assistance

Information concerning the **cost of attending** San José State University is available from the Director of Budget Services, 408-924-1660, and includes fees and tuition (where applicable); the estimated costs of books and supplies; estimates of typical student room, board, and transportation costs; and, if requested, additional costs for specific programs.

Information concerning the **refund policies** of San José State University for the return of unearned tuition and fees or other refundable portions of institutional charges is available from the Bursar's Office, Student Services Center, 408-924-1631.

Information concerning policies regarding the **return of federal Title IV student assistance funds** as required by regulation is available from the Bursar's Office, Student Services Center, 408-924-1631.

Information regarding **facilities and services available to students with disabilities** may be obtained from the Director of the Disability Resource Center, 408-924-6000.

Information concerning San José State University policies, procedures, and facilities for students and others **to report criminal actions or other emergencies** occurring on campus may be obtained from University Police, 408-924-2222.

Information concerning San José State University annual **campus security report** may be obtained from Chief, University Police, 924-2172.

Information concerning the **prevention of drug and alcohol abuse and rehabilitation programs** may be obtained from the Director of Student Health Services, 408-924-6120.

Information regarding **student retention and graduation rates** at San José State University and, if available, the number and percentage of students completing the program in which the student is enrolled or has expressed interest may be obtained from the Associate Vice President for Undergraduate Studies, 408-924-2447.

Information concerning **athletic opportunities** available to male and female students and the financial resources and personnel that San José State University dedicates to its men's and women's teams may be obtained from the Director of Compliance, 408-924-1514.

Information concerning **teacher preparation** programs at San José State University, including the pass rate on teacher certification examinations, may be obtained from Credential Services, 408-924-3541.

Information concerning **grievance procedures for students** who feel aggrieved in their relationships with the university, its policies, practices and procedures, or its faculty and staff may be obtained from the Ombudsman, 408-924-5900.

The federal Military Selective Service Act (the "Act") requires most males residing in the United States to present themselves for **registration with the Selective Service** System within thirty days of their eighteenth birthday. Most males between the ages of 18 and 25 must be registered. Males born after December 31, 1959, may be required to submit a statement of compliance with the Act and regulations in order to receive any grant, loan, or work assistance under specified provisions of existing federal law. In California, students subject to the Act who fail to register are also ineligible to receive any need-based student grants funded by the state or a public postsecondary institution. Selective Service registration forms are available at any U.S. Post Office, and many high schools have a staff member or teacher appointed as a Selective Service Registrar. Applicants for financial aid can also request that information provided on the Free Application for Federal Student Aid (FAFSA) be used to register them with the Selective Service. Information on the Selective Service System is available and the registration process may be initiated at www.sss.gov.

Financial Assistance

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

1. A description of the federal, state, institutional, local, and private student financial assistance programs available to students who enroll at San José State University;
2. For each aid program, a description of procedures and forms by which students apply for assistance, student eligibility requirements, criteria for selecting recipients from the group of eligible applicants, and criteria for determining the amount of a student's award;
3. A description of the rights and responsibilities of students receiving financial assistance, including federal Title IV student assistance programs, and criteria for continued student eligibility under each program;
4. The satisfactory academic progress standards that students must maintain for the purpose of receiving financial assistance and criteria by which a student who has failed to maintain satisfactory progress may reestablish eligibility for financial assistance;
5. The method by which financial assistance disbursements will be made to students and the frequency of those disbursements;
6. The terms of any loan received as part of the student's financial aid package, a sample loan repayment schedule, and the necessity for repaying loans;
7. The general conditions and terms applicable to any employment provided as part of the student's financial aid package;
8. The responsibility of San José State University for providing and collecting exit counseling information for all student borrowers under the federal student loan programs; and
9. The terms and conditions for deferral of loan payments for qualifying service under the Peace Corps Act, the Domestic Volunteer Service Act of 1973, or comparable volunteer community service.

Nondiscrimination Policies

Campus Climate: Tolerance, Respect and Understanding

As members of a university community it is our responsibility to advocate tolerance, respect and understanding at a level above that which is minimally required of us by law. While SJSU has largely succeeded in creating a diverse campus community, it must also actively promote a civil campus climate. This may require changes in attitudes and behaviors as we develop our common bonds.

Several of the convictions that might help us as members of an educational institution create these bonds are:

Respect for the individual: In recognition of individual uniqueness and value, whether as students, faculty, staff or administrators, it is our commitment to discourage appropriately any actions, behaviors, communication or programs that erode this fundamental concern for the individual.

Commitment to issue and problem resolution: It is the intent of the university to recognize the process of problem and issue resolution as integral to the successful achievement of its mission. SJSU is committed to addressing problems and issues in a responsive, equitable and timely manner.

Open communication and feedback: The university endorses and supports an environment of open communication and feedback. In support of this principle, the university will develop internal programs to educate, evaluate and provide feedback to support the growth process, including the growth of community and civility.

Disability

The California State University does not discriminate on the basis of disability in admission or access to, or treatment or employment in, its programs and activities. Sections 504 and 508 of the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990, and various state laws prohibit such discrimination. The Office for Equal Opportunity has been designated to coordinate the efforts of SJSU to comply with all relevant disability laws. Inquiries concerning compliance may be addressed to this person at 408-924-1115.

Federal Statute and Guidelines on Handling Racial Incidents at Educational Institutions

Title VII of the Civil Rights Act of 1964 is enforced by the U.S. Department of Education's Office for Civil Rights issued guidelines for educational institutions receiving federal assistance to follow in handling "Racial Incidents and Harassment Against Students at Educational Institutions." These guidelines clarify conduct that violates Title VI:

"Under Title VI of Civil Rights Act of 1964 (Title VI) and its implementing regulations, no individual may be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination on the ground of race, color or national origin under any program or activity that receives federal funds.

Racially based conduct that has such an effect and that consists of different treatment of students on the basis of race by agents or employees, acting within the scope of their official duties, violates Title VI. In addition, the existence of a racially hostile environment that is created, encouraged, accepted, tolerated or left uncorrected ... also constitutes different treatment on the basis of race in violation of Title VI."

These same Title VI guidelines further define a "racially hostile environment" as harassing conduct (e.g. physical, verbal, graphic or written) that is sufficiently severe, pervasive or persistent so as to interfere with or limit the ability of an individual to participate in or benefit from the services, activities or privileges provided.

Race, Color and National Origin

The California State University complies with the requirements of Title VI and Title VII of the Civil Rights Act of 1964, as well as other applicable federal and state laws prohibiting discrimination. No person shall, on the basis of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination in any program of the California State University.

Retaliation Protection

SJSU policies prohibit retaliation against persons who file a complaint of discrimination, or assist with or participate in an SJSU or government agency investigation, proceeding or hearing concerning discrimination complaint. Retaliation complaints can be separately filed in the Office for Equal Opportunity, 408-924-1115. Or go to www.sjsu.edu/hr for more information

ROTC Recruiting

This notice is to inform you that San José State University hosts the Air Force Reserve Officers Training Corps program on campus solely in compliance with the federal requirements contained in The Solomon Amendment.

This law, passed as an attachment to the FY97 Federal Appropriations Bill, allows the government to deny federal funding, including federal student aid, to any school that does not provide access to ROTC programs and military recruiters on its campus.

San José State University views the military's policy of "don't ask, don't tell" with regard to gay, lesbian, bisexual and transgender individuals as a violation of the university's anti-discrimination policy. San José State University is guided by the principle of equal opportunity, including the conviction that there will be no differential treatment or harassment of persons because of race, color, religion, national origin, age, sex, marital status, pregnancy, disability, veteran's status, or sexual orientation. The university has a firm and unambiguous commitment to the active elimination of discrimination, and the affirmative recruitment of a diverse, multi-racial community of students, faculty and staff.

Sex/Gender

The California State University does not discriminate on the basis of sex, gender or sexual orientation in the educational

programs or activities it conducts. Title IX of the Education Amendments of 1972 and certain other federal and state laws prohibit discrimination on these bases in education programs and activities operated by San José State University. Such programs and activities include admission of students and employment. Inquiries concerning the application of these laws to programs and activities of [name of institution] may be referred to [name of person], the campus officer(s) assigned the administrative responsibility of reviewing such matters or to the Regional Director of the Office of Civil Rights, Region IX, 50 United Nations Plaza, Room 239, San Francisco, California 94102.

The California State University is committed to providing equal opportunities to male and female CSU students in all campus programs, including intercollegiate athletics.

Sexual Orientation

By CSU Board of Trustee policy, the California State University does not discriminate on the basis of sexual orientation.

Sexual Harassment Policy and Complaints

SJSU is committed to maintaining a working and learning environment free from sexual harassment for its students, employees and those who apply for employee or student status. Sexual harassment is conduct subject to disciplinary action.

CSU policy defines sexual harassment to include "such behavior as sexual advances, requests for sexual favors and other verbal or physical conduct of a sexual nature directed towards an employee, student or applicant when one or more of the following circumstances are present:

- Submission to or toleration of the conduct is an explicit or implicit term or condition of appointment, employment, admission or academic evaluation
- Submission to or rejection of such conduct is used as a basis for a personnel decision or an academic evaluation affecting an individual
- The conduct has the purpose of interfering with an employee's work performance or creating an intimidating, hostile, offensive or otherwise adverse working environment
- The conduct had the purpose or effect of interfering with a student's academic performance, creating an intimidating, hostile, offensive or otherwise adverse learning environment, or adversely affecting any student.

All complaints dealing with sexual harassment should be directed to the Director, Office for Equal Opportunity, who has been designated to investigate such allegations.

SJSU Policies

San José State University does not discriminate on the basis of accent, age, ancestry, citizenship status, color, creed, disability, ethnicity, gender, marital status, medical condition, national origin, race, religion or lack thereof, sex, sexual orientation, transgender and veteran's status. This policy applies to all SJSU student, faculty and staff programs and activities.

Ombudsman

While an employee of the university, the Ombudsman is an independent agent available to any person connected with the campus who has a complaint about university policy and procedures. Violations of student rights and policies that are perceived as being unfair or outdated are two of the problem areas with which the Ombudsman deals. The Ombudsman also screens cases for the Student Fairness Committee.

Student Fairness Committee

The Student Fairness Committee hears complaints of violations of student rights in instructional and curricular matters, including grade appeals and, when appropriate, makes recommendations for redress. The committee also hears and pursues appropriate resolution of non-instructional student grievances concerning individual members of the faculty, administration or staff. The Ombudsman, Administration 242, 408-924-5900, is the person to contact about the work of this committee.

Privacy Rights Of Students In Education Records

The federal Family Educational Rights and Privacy Act of 1974 (20 U.S.C. 1232g) and regulations adopted thereunder (34 C.F.R. 99) set out requirements designed to protect students' privacy in their records maintained by the campus. The statute and regulations govern access to certain student records maintained by the campus and the release of such records. The law provides that the campus must give students access to most records directly related to the student, and must also provide opportunity for a hearing to challenge the records if the student claims they are inaccurate, misleading, or otherwise inappropriate. The right to a hearing under this law does not include any right to challenge the appropriateness of a grade determined by the instructor. The law generally requires the institution to receive a student's written consent before releasing personally identifiable data about the student. The institution has adopted a set of policies and procedures governing implementation of the statute and the regulations. Copies of these policies and procedures may be obtained at (designate location on campus). Among the types of information included in the campus statement of policies and procedures are: (1) the types of student records maintained and the information they contain; (2) the official responsible for maintaining each type of record; (3) the location of access lists indicating persons requesting or receiving information from the record; (4) policies for reviewing and expunging records; (5) student access rights to their records; (6)

the procedures for challenging the content of student records; (7) the cost to be charged for reproducing copies of records; and (8) the right of the student to file a complaint with the Department of Education. The Department of Education has established an office and review board to investigate complaints and adjudicate violations. The designated office is: Family Policy Compliance Office, U.S. Department of Education, Washington, D.C. 20202-4605.

The campus is authorized under the Act to release "directory information" concerning students. "Directory information" may include the student's name, address, telephone listing, electronic mail address, photograph, date and place of birth, major field of study, participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of attendance, grade level, enrollment status, degrees, honors, and awards received, and the most recent previous educational agency or institution attended by the student. The above-designated information is subject to release by the campus at any time unless the campus has received prior written objection from the student specifying what information the student requests not be released. Written objections should be sent to the Registrar's Office. It should be noted, however, that university policy S66-20 is more restrictive than the law. SJSU policy guidelines indicate that the only directory information routinely released to outside parties without student consent is enrollment status and degree completion (if applicable). Requests for addresses and telephone numbers are not honored, especially if for commercial purposes.

The campus is authorized to provide access to student records to campus officials and employees who have legitimate educational interests in such access. These persons have responsibilities in the campus's academic, administrative or service functions and have reason for accessing student records associated with their campus or other related academic responsibilities. Student records may also be disclosed to other persons or organizations under certain conditions (e.g., as part of the accreditation or program evaluation; in response to a court order or subpoena; in connection with financial aid; or to other institutions to which the student is transferring).

Career Placement Information

The Career Center may furnish, upon request, information about the employment of students who graduate from programs or courses of study preparing students for a particular career field. Any such data provided must be in a form that does not allow for the identification of any individual student. This information includes data concerning the average starting salary and the percentage of previously enrolled students who obtained employment. The information may include data collected from either graduates of the campus or graduates of all campuses in the California State University system.

University Development Programs

Directory information (see definition earlier) may be used by the university for the development of campus affiliated programs.

Student Identification Information

SJSU ID Number

San José State University is concerned about keeping your personal data private. We are required to use Social Security numbers to process payroll; award financial aid and document fees paid for tax relief purposes. However, for all other purposes, we will use your SJSU ID number for identification, rather than your Social Security Number.

Use of Social Security Number

Applicants are required to include their correct social security numbers in designated places on applications for admission pursuant to the authority contained in Section 41201, Title 5, California Code of Regulations, and Section 6109 of the Internal Revenue Code (26 U.S.C. 6109). The university uses the social security number to identify students and their records including identification for purposes of financial aid eligibility and disbursement and the repayment of financial aid and other debts payable to the institution. Also, the Internal Revenue Service requires the university to file information returns that include the student's social security number and other information such as the amount paid for qualified tuition, related expenses, and interest on educational loans. This information is used by the IRS to help determine whether a student, or a person claiming a student as a dependent, may take a credit or deduction to reduce federal income taxes.

**The Student Services Center is your
one-stop source for General Education
updates, most forms, petitions, and
interpretation of campus policy.**

Student Responsibilities

Academic Integrity Policy

The University emphasizes responsible citizenship and an awareness of ethical choices inherent in human development. Academic honesty and fairness foster ethical standards for all those who depend upon the integrity of the university, its courses, and its degrees. University degrees are compromised and the public is defrauded if faculty members or students knowingly or unwittingly allow dishonest acts to be rewarded academically. This policy sets the standards for such integrity and shall be used to inform students, faculty and staff of the university's Academic Integrity Policy.

Student Role

The San José State University Academic Integrity Policy requires that each student:

1. Know the rules that preserve academic integrity and abide by them at all times. This includes learning and abiding by rules associated with specific classes, exams and course assignments.
2. Know the consequences of violating the Academic Integrity Policy.
3. Know the appeal rights, and the procedures to be followed in the event of an appeal.
4. Foster academic integrity among peers.

Faculty Member Role

The San José State University Academic Integrity Policy requires that each faculty member:

1. Provide a clear and concise course syllabus that apprises students of the Academic Integrity Policy and the ethical standards and supporting procedures required in a course.
2. Make every reasonable effort to foster honest academic conduct. Specifically, examinations should be appropriately proctored or monitored to prevent students from copying, using non-cited resources, or exchanging information. Examinations and answers to examination questions should be kept private. Efforts should be made to give unique and varied assignments.
3. Take action against a student in accordance with this policy when supporting evidence indicates that the student has violated the Academic Integrity Policy.
4. Comply with the rules and standards of the Academic Integrity Policy.

ACADEMIC SUCCESS TIP

Commit to live a life of integrity

You're about to be inspired by much of what you see, read, and hear in the classroom, the library and beyond. Knowing what is your own work and when and how to acknowledge the work of others is an important step toward achieving academic integrity. If you aren't sure, ask your professor, a librarian, an advisor or a counselor.

Office of Student Conduct and Ethical Development Role

The San José State University Academic Integrity Policy requires that the Student Conduct Administrator:

1. Comply with and enforce the Student Conduct Code (http://sa.sjsu.edu/student_conduct) which includes the Academic Integrity Policy.
2. Adjudicate student conduct cases and assign administrative sanctions to students who have violated the Student Conduct Code.
3. Serve as a resource for faculty, staff and students on matters of academic integrity and this policy.
4. Ensure dissemination of the policy to the campus community when changes are made to the policy or procedures..

1.0 Definitions Of Academic Dishonesty

1.1 Cheating

At SJSU, cheating is the act of obtaining or attempting to obtain credit for academic work through the use of any dishonest, deceptive, or fraudulent means. Cheating at SJSU includes but is not limited to:

- 1.1.1. Copying, in part or in whole, from another's test or other evaluation instrument including homework assignments, worksheets, lab reports, essays, summaries, quizzes, etc.;
- 1.1.2. Submitting work previously graded in another course unless this has been approved by the course instructor or by departmental policy;
- 1.1.3. Submitting work simultaneously presented in two courses, unless this has been approved by both course instructors or by the department policies of both departments;
- 1.1.4. Using or consulting, prior to, or during an examination, sources or materials not authorized by the instructor;
- 1.1.5. Altering or interfering with the grading process;
- 1.1.6. Sitting for an examination by a surrogate, or as a surrogate;
- 1.1.7. Any other act committed by a student in the course of their academic work which defrauds or misrepresents, including aiding or abetting in any of the actions defined above.

1.2 Plagiarism

At SJSU plagiarism is the act of representing the work of another as one's own without giving appropriate credit, regardless of how that work was obtained, and/or submitting it to fulfill academic requirements. Plagiarism at SJSU includes but is not limited to:

- 1.2.1 The act of incorporating the ideas, words, sentences, paragraphs, or parts of, and/or the specific substance of another's work, without giving appropriate credit, and/or representing the product as one's own work;
- 1.2.2 Representing another's artistic/scholarly works such as musical compositions, computer programs, photographs, paintings, drawing, sculptures, or similar works as one's own.

2.0 Notification of Standards of Detecting Plagiarism

- 2.1 SJSU or its faculty may subscribe to and/or use plagiarism detection services.
- 2.2 Any plagiarism detection service with which SJSU contracts must ensure the anonymity of all submitted work to third parties.
- 2.3 Except for the stated purpose of storing submitted work in databases and/or using the database solely for the intended purpose of detecting plagiarism, any plagiarism detection service with which SJSU contracts shall agree that to the fullest extent possible, ownership rights of all submitted work shall remain with the work's author and not with the plagiarism detection service.

3.0 Evaluation and Reporting

When a faculty member suspects and has supporting evidence to substantiate that the behavior of a student or students fall(s) within one or both of the above sets of definitions, it is the faculty member's responsibility to take the following steps:

- 3.1 Any classroom confrontation should be discreet. Faculty members should not discuss specific charges of cheating, plagiarism, or any other violations involving specific individuals in the classroom before other members of the class.
- 3.2 Communicate with the student concerning the alleged infraction; arrange for a conference to present documentation. Advise the student of the allegations and make them aware of the supporting evidence and the probable consequences. As a result of this conference, if the faculty member believes that the student's response is insufficient to offset the charge of violating the Academic Integrity Policy, the instructor will inform the student of the sanctions to be assessed or recommended in accordance with section 3.0.

All notes and/or discussions between the student and the faculty member will be kept confidential except as may be relevant in subsequent disciplinary proceedings or any subsequent legal actions.

Report the alleged infraction and the academic action taken to the Office of Student Conduct & Ethical Development on the reporting form for violations to the Academic Integrity Policy. A copy of the supporting documentation must be attached to the reporting form.

3.4	The instructor may impose the recommended penalty and make the report called for in section 3.3 without a conference when a student fails to attend a scheduled conference to discuss the alleged dishonesty, or when the apparent dishonesty is detected only near the end of the semester and the faculty makes a good-faith effort to contact the student but is unable to do so. In either case, the student's right to appeal is preserved.	4.1.7 Academic Sanctions: For violations of sections 1.1.5 and 1.1.6, the student must be referred to the Office of Student Conduct & Ethical Development for administrative sanctions as outlined in 4.1.5. For violations of other sections of this policy, the instructor should choose between sanctions 4.1.1 through 4.1.4 based on the severity of the infraction.	7.0 Dissemination Of Information 7.1 This policy shall be published in the Schedule of Classes each semester and in the University Catalog . There shall also be copies of this policy in every department office and copies will be available to all interested parties in the Office of Student Conduct & Ethical Development.
	4.0 Sanctions There shall be two major classifications of sanctions that may be imposed for violations of this policy: Academic and Administrative. Academic sanctions are those actions related to the coursework and/or grades which are the province of the faculty. Administrative sanctions are concerned with a student's status on campus and are acted on by the Office of Judicial Affairs. The imposition of either an academic or administrative sanction will not preclude the additional imposition of the other.	4.2 Administrative Sanctions As stipulated in the California Administrative Code, Section 41301, cheating or plagiarism in connection with an academic program may warrant expulsion, suspension, probation or a lesser sanction. Administrative action involving academic dishonesty at SJSU is the responsibility of the Office of Student Conduct & Ethical Development. The Office of Student Conduct & Ethical Development will respond to: 1. referrals from the faculty; 2. violations of the Academic Integrity Policy; 3. repeat violations as brought to attention by the faculty or through the centralized reports filed in the Office of Student Conduct & Ethical Development.	7.2 Dissemination of this information shall be the responsibility of the Office of Student Conduct & Ethical Development. Information is available at http://sa.sjsu.edu/student_conduct/ The Office of Student Conduct & Ethical Development shall submit a statistical report on the number and type of infractions and their eventual disposition to the Academic Senate annually.
			7.3 Colleges and departments are encouraged to periodically include at faculty meetings, discussion of this policy and strategies for ensuring academic integrity among students.
			7.4 Department chairs and school directors should ensure that new faculty members receive a copy of this policy and a verbal explanation at the time they are given their first class assignment.
	4.1 Academic Sanctions Faculty members are responsible for determining the type of academic sanction to be applied to students involved in incidents of cheating or plagiarism. Faculty may find it helpful to consult with their department chair, senior faculty, and/or the Conduct Officer in consideration of appropriate academic sanctions. Such sanctions shall be proportional to the offense against the Academic Integrity Policy that has occurred. Usually a form of "grade modification" will be employed. Before sanctions can be employed, the faculty member must have verified the instances of academic dishonesty by personal observation and/or documentation. In all cases, the violation must be reported to the Office of Student Conduct & Ethical Development on the reporting form for violations to the Academic Integrity Policy. A student may be: 4.1.1 Reprimanded orally. 4.1.2 Failed in the evaluation instrument (paper or exam). 4.1.3 Reduced in course grade. 4.1.4 Failed in the course. 4.1.5 Referred for administrative sanctions. A faculty member may choose to refer a student to the Office of Student Conduct & Ethical Development for disciplinary action in addition to the academic sanction the faculty member has taken. 4.1.6 Faculty Discretion: Cases involving the careless or inept handling of quoted material but which fall short of the definitions of the acts of cheating and/or plagiarism as defined in Items 1.1 and 1.2 of this policy may be dealt with at the discretion of the faculty member concerned. The faculty has the discretion to deal with any other act committed by a student in the course of their academic work with defrauds or misrepresents, including aiding or abetting other students who violate this policy.	 Faculty members will be notified by the Office of Student Conduct & Ethical Development when action has been taken. The Office of Student Conduct & Ethical Development shall maintain a record of students who have been reported for violating the Academic Integrity Policy. The information in this record will be used to identify and discipline students who have been reported.	
		5.0 Protection Of Rights Nothing in this policy is intended to deny students who come within its scope appropriate "due process," including the right to be informed of the charges, the nature of the evidence supporting the charges, and to have a meeting with the faculty member, the Office of Student Conduct & Ethical Development or other decision-makers, at which time statements and evidence on behalf of the student may be submitted. Nor is it intended to deny the right to appeal, through appropriate university channels, any decision resulting from such a meeting. 5.1 Academic sanctions may be appealed through the Ombudsman in accordance with University Policy S83-7, and ultimately to the Student Fairness Committee. 5.2 When an administrative sanction is being considered, Executive Order 970, Student Disciplinary Procedures for the California State University, stipulates that a student is entitled to a hearing to determine whether violations of conduct and/or conduct-related regulations have occurred.	 The "Policy on Class Attendance" at San José State University requires that students attend all class sessions to ensure continued enrollment in their courses. Failure to attend classes does not guarantee that a student will be dropped from the class roster. However, the instructor is permitted to drop students who fail to attend the first class meeting and who fail to inform the instructor prior to the second class meeting of the reason for any absence and the intention to continue in the class. Instructors have the right to drop students up through the Census date. Students who wish to DROP a course must drop the course through MySJSU on or prior to the deadline to drop a course without a "W" grade. If a student is dropped by the instructor for nonattendance through the Instructor Drop Method, it will be necessary for that student to "Add" the class if he/she still desires that course. To avoid the risk of being dropped from the class roster (through the Instructor Drop Method), students who find it necessary to miss one or more classes during the first five days of the semester should inform their instructors prior to the start of classes. If students have been out of school for one or more days, they should report to their instructors upon their return to inquire about making up the work. Students who know in advance that they will miss one or more classes should inform their instructors.

Discipline Policy

California Code of Regulations

Inappropriate conduct by students or by applicants for admission is subject to discipline as provided in Sections 41301 through 41304 of Title 5, California Code of Regulations.

41301. Standards for Student Conduct

(a) Campus Community Values

The University is committed to maintaining a safe and healthy living and learning environment for students, faculty, and staff. Each member of the campus community should choose behaviors that contribute toward this end. Students are expected to be good citizens and to engage in responsible behaviors that reflect well upon their university, to be civil to one another and to others in the campus community, and contribute positively to student and university life.

(b) Grounds for Student Discipline

Student behavior that is not consistent with the Student Conduct Code is addressed through an educational process that is designed to promote safety and good citizenship and, when necessary, impose appropriate consequences.

The following behavior is subject to disciplinary sanctions are the grounds upon which student discipline can be based::

(1) Dishonesty, including:

- (A) Cheating, plagiarism, or other forms of academic dishonesty that are intended to gain unfair academic advantage.
- (B) Furnishing false information to a university official, faculty member, or campus office.
- (C) Forgery, alteration, or misuse of a university document, key, or identification instrument.
- (D) Misrepresenting oneself to be an authorized agent of the university or one of its auxiliaries.

(2) Unauthorized entry into, presence in, use of, or misuse of university property.

(3) Willful, material and substantial disruption or obstruction of a university-related activity, or any on-campus activity.

(4) Participating in an activity that substantially and materially disrupts the normal operations of the university, or infringes on the rights of members of the university community.

(5) Willful, material and substantial obstruction of the free flow of pedestrian or other traffic, on or leading to campus property or an off-campus university-related activity.

(6) Disorderly, lewd, indecent, or obscene behavior at a university-related activity, or directed toward a member of the university community.

(7) Conduct that threatens or endangers the health or safety of any person within or related to the university community, including physical abuse, threats, intimidation, harassment, or sexual misconduct.

(8) Hazing, or conspiracy to haze. Hazing is defined as any method of initiation or pre-initiation into a student organization or student body, whether or not the organization or body is officially recognized by an educational institution, which is likely to cause serious bodily injury to any former, current, or prospective student of any school, community college, college, university or other educational institution in this state (Penal Code 245.6), and in addition, any act likely to cause physical harm, personal degradation or disgrace resulting in physical or mental harm, to any former, current, or prospective student of any school, community college, college, university or other educational institution. The term "hazing" does not include customary athletic events or school sanctioned events. Neither the express or implied consent of a victim of hazing, nor the lack of active participation in a particular hazing incident is a defense. Apathy or acquiescence in the presence of hazing is not a neutral act, and is also a violation of this section .

(9) Use, possession, manufacture, or distribution of illegal drugs or drug-related paraphernalia, (except as expressly permitted by law and university regulations) or the misuse of legal pharmaceutical drugs.

(10) Use, possession, manufacture, or distribution of alcoholic beverages (except as expressly permitted by law and university regulations), or public intoxication while on campus or at a university- related activity.

(11) Theft of property or services from the university community, or misappropriation of university resources.

(12) Unauthorized destruction, or damage to university property or other property in the university community.

(13) Possession or misuse of firearms or guns, replicas, ammunition, explosives, fireworks, knives, other weapons, or dangerous chemicals (without the prior authorization of the campus president) on campus or at a university-related activity.

(14) Unauthorized recording, dissemination, or publication of academic presentations (including handwritten notes) for a commercial purpose.

(15) Misuse of computer facilities or resources, including:

- (A) Unauthorized entry into a file, for any purpose.
- (B) Unauthorized transfer of a file.
- (C) Use of another's identification or password.
- (D) Use of computing facilities, campus network, or other resources to interfere with the work of another member of the university community.
- (E) Use of computing facilities and resources to send obscene or intimidating and abusive messages.
- (F) Use of computing facilities and resources to interfere with normal university operations.
- (G) Use of computing facilities and resources in violation of copyright laws.
- (H) Violation of a campus computer use policy.

(16) Violation of any published university policy, rule, regulation or presidential order.

(17) Failure to comply with directions of, or interference with, any University official or any public safety officer while acting in the performance of his/her duties.

(18) Any act chargeable as a violation of a federal, state, or local law that poses a substantial threat to the safety or well-being of members of the university community, to property within the university community or poses a significant threat of disruption or interference with university operations.

(19) Violation of the Student Conduct Procedures, including:

- (A) Falsification, distortion, or misrepresentation of information related to a student discipline matter.
- (B) Disruption or interference with the orderly progress of a student discipline proceeding.
- (C) Initiation of a student discipline proceeding in bad faith.
- (D) Attempting to discourage another from participating in the student discipline matter.
- (E) Attempting to influence the impartiality of any participant in a student discipline matter.
- (F) Verbal or physical harassment or intimidation of any participant in a student discipline matter.
- (G) Failure to comply with the sanction(s) imposed under a student discipline proceeding.

(20) Encouraging, permitting, or assisting another to do any act that could subject him or her to discipline.

(c) Application of this Code

Sanctions for the conduct listed above can be imposed on applicants, enrolled students, students between academic terms, graduates awaiting degrees, and students who withdraw from school while a disciplinary matter is pending. Conduct that threatens the safety or security of the campus community, or substantially disrupts the functions or operation of the University is within the jurisdiction of this Article regardless of whether it occurs on or off campus. Nothing in this Code may conflict with Education Code section 66301 that prohibits disciplinary action against students based on behavior protected by the First Amendment.

(d) Procedures for Enforcing this Code

The Chancellor shall adopt procedures to ensure students are afforded appropriate notice and an opportunity to be heard before the university imposes any sanction for a violation of the Student Conduct Code.

41302. Disposition of Fees: Campus Emergency; Interim Suspension

The president of the campus may place on probation, suspend, or expel a student for one or more of the causes enumerated in Section 41301. No fees or tuition paid by or for such student for the semester, quarter, or summer session in which he or she is suspended or expelled shall be refunded. If the student is readmitted before the close of the semester, quarter, or summer session in which he or she is suspended, no additional tuition or fees shall be required of the student on account of the suspension.

During periods of campus emergency, as determined by the president of the individual campus, the President may, after consultation with the chancellor, place into immediate effect any emergency regulations, procedures, and other measures deemed necessary or appropriate to meet the emergency, safeguard persons and property, and maintain educational activities.

The president may immediately impose an interim suspension in all cases in which there is reasonable cause to believe that such an immediate suspension is required in order to protect lives or property and to insure the maintenance of order. A student so placed on interim suspension shall be given prompt notice of charges and the opportunity for a hearing within 10 days of the imposition of interim suspension. During the period of interim suspension, the student shall not, without prior written permission of the President or designated representative, enter any campus of the California State University other than to attend the hearing. Violation of any condition of interim suspension shall be grounds for expulsion.

41303. Conduct by Applicants for Admission

Notwithstanding any provision in this Chapter 1 to the contrary, admission or readmission may be qualified or denied to any person who, while not enrolled as a student, commits acts which, were he enrolled as a student, would be the basis for disciplinary proceedings pursuant to Sections 41301 or 41302. Admission or readmission may be qualified or denied to any person who, while a student, commits acts which are subject to disciplinary action pursuant to Section 41301 or Section 41302. Qualified admission or denial of admission in such cases shall be determined under procedures adopted pursuant to Section 41304.

41304. Student Disciplinary Procedures for the California State University

The chancellor shall prescribe, and may from time to time revise, a code of student disciplinary procedures for the California State University. Subject to other applicable law, this code shall provide for determinations of fact and sanctions to be applied for conduct which is a ground of discipline under Sections 41301 or 41302, and for qualified admission or denial of admission under Section 41303; the authority of the campus president in such matters; conduct-related determinations on financial aid eligibility and termination; alternative kinds of proceedings, including proceedings conducted by a hearing officer; time limitations; notice; conduct of hearings, including provisions governing evidence, a record and review; and such other related matters as may be appropriate. The chancellor shall report to the board actions taken under this section.

Selective Service-Eligibility for Aid

The federal Military Selective Service Act (the "Act") requires most males residing in the United States to present themselves for registration with the Selective Service System within thirty days of their eighteenth birthday. Most males between the ages of 18 and 25 must be registered. Males born after December 31, 1959 may be required to submit a statement of compliance with the Act and regulations in order to receive any grant, loan or work assistance under specified provisions of existing federal law. In California, students subject to the Act who fail to register are also ineligible to receive any need-based student grants funded by the state or a public postsecondary institution.

Selective Service registration forms are available at any U.S. Post Office, and many high schools have a staff member or teacher appointed as a Selective Service registrar. Applicants for financial aid can also request that information provided on the Free Application for Federal Student Aid (FAFSA) be used to register them with the Selective Service. Information on the Selective Service System is available and the registration process may be initiated online at <http://www.sss.gov>.

Drug-Free Schools Statement

In accordance with the Drug-Free Workplace and the Drug-Free Schools and Communities Act (P.L. 102-226) and the Presidential Directive (90-92), SJSU recognizes that the abuse of alcohol and other drugs is a threat to the health and welfare of the campus community and is not compatible with an environment where education takes place. Therefore, the following principles will serve as standards of conduct.

The unlawful manufacture, possession, distribution or use of a controlled substance is prohibited on campus. Violation of this standard may result in dismissal under the applicable regulations of the Title V and will subject to civil and criminal penalties.

No individual below the age of 21 and no intoxicated individual may use, purchase or possess alcoholic beverages or they may be subject to the penalties imposed by local, state and federal laws.

SJSU recognizes that its policy on illicit drugs and alcohol meets the legal requirements of public laws 101-226, 100-440, 100-690 and the California Penal Code. For more explicit information on the policy and sanctions, contact the Office of the Vice President for Student Affairs or the Student Health Center.

SJSU's Commitment to Student Health and Safety

SJSU is sincerely concerned for the welfare of all members of its community. The university recognizes that college and university campuses may be particularly vulnerable to the abuse of alcohol and other drugs. Concern for the potential impairment of education and learning and the safety and good health of all members of the campus community, as well as the effective conduct of campus affairs, has led SJSU to issue this information.

This information was prepared to inform members of the campus community of the problems associated with alcohol and illicit drug abuse; to indicate sources of assistance for such problems; to emphasize standards of conduct desired of students, faculty and employees; and to note sanctions associated with infractions of these standards and other illegal acts related to abuse.

All colleges and universities that receive federal funds in any form are required to comply with Public Law 101-226. Partial compliance with this new law requires annual distribution of information to students and employees. This law, in addition to the Drug Free Workplace Act (Public Law 100-690) which requires applicants for federally funded grants and contracts (including certain forms of student financial aid) to certify that they will take affirmative steps to prohibit the unlawful manufacture, distribution, possession and use of controlled substances in the workplace, establishes the legal requirements for SJSU.

A more complete compendium on Federal, State and Local laws is available at the following locations:

- Vice President for Student Affairs, ADM 242
- Human Resources, UPD
- Prevention Education Program, HB 220

Final Examination Policy

It is the general policy in most courses to have several examinations during the semester and a final examination. Supervision of examinations is the responsibility of each college dean. Exceptions to the requirement for giving a final examination must be approved by the college dean.

Verifiable emergency circumstances should be recognized by the instructor as a valid reason for a student to reschedule an exam. A student having exams in courses that total nine or more units in one day may request an alternative exam date from one of his/her instructors at least three weeks prior to the last class meeting. If the student and the instructor are unable to agree on rescheduling, the department chairperson shall negotiate an appropriate solution. Rescheduled exams should be taken during the make-up period. For additional information on rules governing final examinations, consult the *SJSU Schedule of Classes*.

Graduate students should refer to section on Final Master's Examinations.

ACADEMIC SUCCESS TIP

Respect the classroom experience

Arrive on time, turn off your cell phone and take a break from text messaging. Sit up front and participate – turn your full attention to the class.

Teaching: How to Become a Teacher in California

A CALIFORNIA TEACHING CREDENTIAL is a license to teach in California public schools. The **Single Subject Credential** is primarily for those who intend to teach at the secondary level (high school) and middle school.

The **Multiple Subject Credential** is primarily for those who plan to teach at the elementary level (elementary school) and middle school. The **Education Specialist Credential** is for individuals who want to become special educators.

Students or graduates wanting to pursue a teaching credential should contact the program coordinator or subject matter advisor in the major department.

A description of the different options is outlined on these pages. The process, requirements, and application materials are described in detail on each program's website.

Becoming an Elementary School Teacher

1. As an undergraduate student consider one of the following programs. See catalog index for more information.

- Child and Adolescent Development
- Creative Arts
- Environmental Studies
- Liberal Studies
- Natural Science
- Social Science

Each of the above majors has a teacher preparation option that was designed to prepare for teaching in grades K-8.

2. Apply for Admission to the Multiple Subject Credential Program

Applications to the Credential Program are accepted for Fall, Spring, and Summer semesters.

Requirements include:

- Admission to Graduate Studies at San José State University.
- Grade point average (GPA) of 2.67 or better (see advisor)
- Passing score on California Basic Education Skills Test (CBEST)
- Satisfaction of the U.S. Constitution Requirement
- Completion of 50 hours of verifiable, supervised experience with children in an instructional setting (or approved alternative coursework)
- Passing score on California Subject Examinations for Teachers (CSET): Multiple Subject Tests.
- Completion of Multiple Subject Credential Program Application. (available in SH 305)
- Passing score on the College of Education Technology Test or course EDIT 122.

3. Complete a Professional Preparation Program Leading to the Multiple Subject Credential

Program options include BCLAD (Bilingual Cross-cultural Language & Academic Development) emphasis, internship, partnerships, and combination credential/Master's degree.

The following requirements apply to all of the above options, except for the Integrated Degree/Credential Program in Child and Adolescent Development:

Preliminary Credential (Level I)

- Bachelor's degree from a regionally accredited college or university. Bachelor's degree must be granted on the same day or after university graduation.
- Prerequisites: Certificate of Clearance for personal and professional fitness
- Foundations: EDEL 102 and EDEL 103
- Dual language: EDEL 162
- Curriculum: EDEL 108A, 108B, 108C, and 108D
- Student teaching: 143A (Orientation) and 143B (Practicum), including EDTE 260/EDTE 246

In addition, these State requirements should now be taken as prerequisites, or any time prior to applying for the Preliminary Credential:

- EDTE 190 Health Education for the Classroom Teacher
- EDSE 192 Mainstreaming for the Exceptional Child

Professional Clear Credential (Level II)

Employed teachers must continue professional development for a Level II credential following completion of the Preliminary Credential. This is generally completed through an induction program in the district where the individual is hired.

Preparation and Tests

CREDENTIAL	UNDERGRADUATE PREPARATION	TESTS	POST-BACCALAUREATE PREPARATION
Pre-School	Consult Child and Adolescent Development department	None	None
Elementary School	Complete a Multiple Subject Matter Preparation program	CBEST, CSET	Multiple Subject Credential program
Middle School	Complete preparation requirements for secondary teaching or elementary teaching with sufficient units of work in a subject or the subject CSET and complete a methods course in teaching the subject area.	CBEST, CSET for Multiple Subject	Multiple or Single Subject Credential program
High School	Complete a Single Subject Matter Preparation program or pass CSET	CBEST	Single Subject Credential program
Special Education	Complete a Bachelor's degree.	CBEST	See department for details
Bilingual/ESL (Grades K-12)	Complete a Multiple or Subject Matter Preparation program	CBEST, CSET and Language Proficiency and Culture	Multiple Subject (BCLAD Emphasis or Certificate)

Becoming a **Secondary School Teacher**

1. Complete a Single Subject Matter Preparation Program

Departments with asterisks (*) offer programs that are fully compliant with the California Commission on Teacher Credentialing requirements for subject matter preparation. Students in other majors may have to take the California Subject Exam for Teachers (CSET). See your department advisor for your particular course of study.

Art*	Geography	Meteorology
Biology	History	Music*
Chemistry	Journalism	Physics
Earth Science	Kinesiology*	Political Science
Economics	Linguistics	Social Sciences*
English*	Mathematics	Spanish
French		

Students who have completed or wish to complete another major may consult with the teacher preparation advisor from one of the listed programs to determine possible equivalence to Single Subject Matter competency.

2. Apply for Admission to the Single Subject Credential Program

Applications to the Credential Program are accepted for both Fall and Spring semesters. Requirements include:

- Admission to San José State University
- Grade point average (GPA) of 2.67 or better
- Passing score on California Basic Education Skills Test (CBEST)
- Satisfaction of the Constitution requirement
- Completion of 45 hours of verifiable, supervised experience with children in a public school setting (grades 7-12)
- Certification of subject matter preparation (see listed programs)
- Completion of application process located at www.sjsu.edu/secondaryed
- Passing score on the College of Education Technology Test or course EDIT 122.

3. Complete a Professional Preparation Program leading to a Single Subject Credential

REQUIREMENTS INCLUDE:

Preliminary Credential (Level I)

Non-renewable, valid for a maximum of five years.

- Bachelor's degree from a regionally accredited college or university
- Prerequisite: Certificate of Clearance of personal and professional fitness
- Foundations: EDSC 172A and EDSC 173
- Reading methods: EDSC 138A
- Language development: EDSC 162
- Health Education: EDTE 190 plus CPR (adult, infant and child)
- Mainstreaming: EDSE 192
- Evaluation: EDSC 182
- Student teaching: EDSC 184X; 184Y and 184Z in disciplinary departments
- Subject-specific methods

Professional Clear Credential (Level II)

Employed teachers must continue professional development for a Level II credential following completion of the Preliminary Credential. This is generally completed through an induction program in the district where the individual is hired.

Becoming a **Special Education Teacher**

1. Bachelor's Degree

2. Apply for admission to one of the four Education Specialist credential programs: Mild-Moderate Disabilities; Moderate-Severe Disabilities; Deaf or Hard of Hearing, or Early Childhood Special Education.

Applications to the Credential Program are accepted for both fall and spring semesters. Applications for the internships might be restricted to fall only, must check with department.

Requirements include:

- Admission to San José State University.
- Grade Point average (GPA) of 2.67, or better.
- Passing score on all parts of the California Basic Education Skills Test (CBEST).
- Satisfaction of the U.S. Constitution requirement.
- Completion of 50 hours of verifiable, supervised experience with children in an instructional setting.
- Completion of the Department's application.
- Completion of subject matter requirement.
- Certificate of Clearance for personal and professional fitness.

3. Complete a Professional Preparation Program Leading to the Educational Specialist Credential

To be endorsed for the credential, the following requirements apply to all options:

Preliminary Credential (Level I)

- Bachelor's degree from a regionally accredited college or university and program.
- Satisfied all course requirements for the credential option (see Special Education section of the Catalog).
- Grades of "B" or better in all credential courses.
- Proof of competence in Reading Instruction by passing the RICA, unless candidate holds a valid California Multiple or Single Subject Credential.
- An offer of employment from a California school district, non-public school or agency, or county office of education.

Professional Clear (Level II)

To be endorsed for the credential, the following requirements apply to all options:

- Candidates must hold Level I Preliminary Education Specialist Credential.
- Candidates must apply to complete a Level II program of study, advanced coursework, and experiences including health education and the technology requirement.
- Complete an induction plan.
- Complete a program of study and experiences (see Special Education section of Catalog).
- Professional portfolio demonstrating advanced knowledge and skills.
- Verification of full-time employment as a special education teacher in a California public school, NPS or County Office of Education program while holding Preliminary Level I credential.
- Grades of "B" or better in all courses for credential.

The California State University

The individual California State Colleges were brought together as a system by the Donahoe Higher Education Act of 1960. In 1972 the system became the California State University and Colleges, and in 1982 the system became the California State University. Today the campuses of the CSU include comprehensive and polytechnic universities and, since July 1995, the California Maritime Academy, a specialized campus.

The oldest campus-San José State University-was founded in 1857 and became the first institution of public higher education in California. The newest – CSU Channel Islands – opened in fall 2002, with freshmen arriving in fall 2003.

Responsibility for the California State University is vested in the Board of Trustees, whose members are appointed by the Governor. The Trustees appoint the Chancellor, who is the chief executive officer of the system, and the Presidents, who are the chief executive officers of the respective campuses.

The Trustees, the Chancellor, and the Presidents develop systemwide policy, with implementation at the campus level taking place through broadly based consultative procedures. The Academic Senate of the California State University, made up of elected representatives of the faculty from each campus, recommends academic policy to the Board of Trustees through the Chancellor.

Academic excellence has been achieved by the California State University through a distinguished faculty whose primary responsibility is superior teaching. While each campus in the system has its own unique geographic and curricular character, all campuses, as multipurpose institutions, offer undergraduate and graduate instruction for professional and occupational goals as well as broad liberal education. All the campuses require for graduation a basic program of "General Education Requirements" regardless of the type of bachelor's degree or major field selected by the student.

The CSU offers more than 1,800 bachelor's and master's degree programs in 240 subject areas. Many of these programs are offered so that students can complete all upper division and graduate requirements by part-time, late afternoon, and evening study. A variety of teaching and school service credential programs are available. A limited number of doctoral degrees are offered jointly with the University of California and with private institutions in California. In 2005, the CSU was authorized to independently offer educational doctorate (Ed.D.) programs, and seven CSU campuses launched their Ed.D. programs in fall 2007.

Enrollments in fall 2005 totaled 417,000 students, who were taught by some 23,000 faculty. The system awards about half of the bachelor's degrees and a third of the master's degrees granted in California. Nearly 2.5 million persons have graduated from the CSU since 1961.

Average Support Cost Per Full-Time Equivalent Student and Sources of Funds

The total support cost per full-time equivalent student includes the expenditures for current operations, including payments made to students in the form of financial aid, and all fully reimbursed programs contained in state appropriations. The average support cost is determined by dividing the total cost by the number of full-time equivalent students (FTES). The total CSU 2007/08 final budget amounts were \$2,985,874,000 from state General Fund appropriations (not including capital outlay funding), \$1,130,641,000 from State University Fee (SUF) revenue, \$369,741,000 from other fee revenues and reimbursements for a total of \$4,486,256,000. The number of projected 2007/08 full-time equivalent students (FTES) is 356,296. The number of full-time equivalent students is determined by dividing the total academic student load by 15 units per term (the figure used here to define a full-time student's academic load).

The 2007/08 average support cost per full-time equivalent student based on General Fund appropriation and State University Fee revenue only is \$11,553 and when including all sources as indicated below is \$12,567. Of this amount, the average student fee support per FTE is \$3,864, which includes all fee revenue in the CSU Operating Fund (e.g. State University Fee, nonresident tuition, application fees, and other miscellaneous fees).

2007/2008	Amount	Average Cost per FTE Student	Percentage
State Appropriation	2,985,874,000	8,380	66%
Student Fee Support*	1,130,641,000	3,173	24%
Other Income & Reimbursements**	369,741,000	1,038	10%
Total Support Cost	\$4,486,256,000	\$12,591	100%

*Student fee support represents campus 2007/08 final budget submitted State University Fee revenue.

**The other income and reimbursements represent campus other fee 2007/08 final budget revenues submitted, as well as reimbursements in the CSU Operating Fund.

The average CSU 2007/08 academic year, resident, undergraduate student fees required to apply to, enroll in, or attend the university is \$3,521. However, the costs paid by individual students will vary depending on campus, program, and whether a student is part-time, full-time, resident, or nonresident.

Detailed, current student cost information is located at www.sjsu.edu/bursar.

The CSU Campuses

California State University, Bakersfield

9001 Stockdale Highway
Bakersfield, California 93311-1099
Dr. Horace Mitchell, President
661-664-2011
www.csub.edu

California State University, Channel Islands

One University Drive
Camarillo, CA 93012
Dr. Richard R. Rush, President
805-437-8400
www.csuci.edu

California State University, Chico

400 West First Street
Chico, California 95929-0150
Dr. Paul J. Zingg, President
530-898-4636
www.csuchico.edu

California State University, Dominguez Hills

1000 East Victoria Street
Carson, California 90747-0005
Dr. Mildred Garcia, President
310-243-3301
www.csudh.edu

California State University, East Bay

25800 Carlos Bee Boulevard
Hayward, California 94542
Dr. Mohammad Qayoumi, President
510-885-3000
www.csueastbay.edu

California State University, Fresno

5241 North Maple Avenue
Fresno, California 93740
Dr. John D. Welty, President
559-278-4240
www.csufresno.edu

California State University, Fullerton

800 N. State College Boulevard
Fullerton, California 92834-9480
Dr. Milton A. Gordon, President
714-278-2011
www.fullerton.edu

Humboldt State University

One Harpst Street
Arcata, California 95521-8299
Dr. Rollin C. Richmond, President
707-826-3011
www.humboldt.edu

California State University, Long Beach

1250 Bellflower Boulevard
Long Beach, California 90840-0115
Dr. F. King Alexander, President
562-985-4111
www.csulb.edu

California State University, Los Angeles

5151 State University Drive
Los Angeles, California 90032
Dr. James M. Rosser, President
323-343-3000
www.calstatela.edu

California Maritime Academy

200 Maritime Academy Drive
Vallejo, California 94590
Dr. William B. Eisenhardt, President
707-654-1000
www.csum.edu

California State University, Monterey Bay

100 Campus Center
Seaside, California 93955-8001
Dr. Dianne F. Harrison, President
831-582-3330
www.csumb.edu



California State University, Northridge

18111 Nordhoff Street
Northridge, California 91330
Dr. Jolene Koester, President
818-677-1200
www.csun.edu

California State Polytechnic University, Pomona

3801 West Temple Avenue
Pomona, California 91768
Dr. J. Michael Ortiz, President
909-869-2290
www.csupomona.edu

California State University, Sacramento

6000 J Street
Sacramento, California 95819
Dr. Alexander Gonzalez, President
916-278-6011
www.csus.edu

California State University, San Bernardino

5500 University Parkway
San Bernardino, California 92407-2397
Dr. Albert Karnig, President
909-880-5000
www.csusb.edu

San Diego State University

5300 Campanile Drive
San Diego, California 92182
Dr. Stephen L. Weber, President
619-594-5000
www.sdsu.edu

San Francisco State University

1600 Holloway Avenue
San Francisco, California 94132
Dr. Robert A. Corrigan, President
415-338-1111
www.sfsu.edu

San José State University

One Washington Square
San José, California 95192-0001
Mr. Don W. Kassing, President
408-924-1000
www.sjsu.edu

California Polytechnic State University,

San Luis Obispo
San Luis Obispo, California 93407
Dr. Warren J. Baker, President
805-756-1111
www.calpoly.edu

California State University, San Marcos

333 S. Twin Oaks Valley Road
San Marcos, CA 92096-0001
Dr. Karen S. Haynes, President
760-750-4000
www.csusm.edu

Sonoma State University

1801 East Cotati Avenue
Rohnert Park, California 94928-3609
Dr. Ruben Armijana, President
707-664-2880
www.sonoma.edu

California State University, Stanislaus

801 West Monte Vista Avenue
Turlock, California 95382-0299
Dr. Hamid Shirvani, President
209-667-3122
www.csustan.edu

Trustees of the California State University

The Honorable Arnold Schwarzenegger

Governor of California
State Capitol, Sacramento 95814

The Honorable John Garamendi

Lieutenant Governor of California
State Capitol, Sacramento 95814

The Honorable Fabian Núñez

Speaker of the Assembly
State Capitol, Sacramento 95814

The Honorable Jack O'Connell

State Superintendent of Public Instruction
721 Capitol Mall, Sacramento 95814

Dr. Charles B. Reed

Chancellor of the California State University
401 Golden Shore, Long Beach 90802-4210

Officers of the Trustees

The Honorable Arnold Schwarzenegger

President

Roberta Achtenberg

Chair

Jeffrey L. Bleich

Vice Chair

Christine Helwick

Secretary

Richard P. West

Treasurer

Appointed Trustees

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

Roberta Achtenberg (2015)

Jeffrey Bleich (2010)

Herbert L. Carter (2011)

Carol Chandler (2012)

Debra S. Farar (2014)

Kenneth Fong (2013)

George Gowgani (2010)

Melinda Guzman (2012)

William Hauck (2009)

Raymond W. Holdsworth Jr. (2011)

Ricardo F. Icaza (2008)

Bob Linscheid (2009)

Peter Mehas (2015)

Henry Mendoza (2008)

Lou Monville (2014)

Jennifer Reimer (2008)

Craig Smith (2009)

Glen Toney (2013)

Kyriakos Tsakopoulos (2009)

Correspondence should be sent:

c/o Trustees Secretariat
The California State University
401 Golden Shore, Long Beach, CA 90802-4210

CSU Administration

Office of the Chancellor

401 Golden Shore, Long Beach, CA 90802-4210
562-951-4000

Dr. Charles B. Reed

Chancellor, CSU System

Dr. Gary Reichard

Executive Vice Chancellor and Chief Academic Officer

Mr. Richard P. West

Executive Vice Chancellor and Chief Financial Officer

Ms. Gail Brooks

Interim Vice Chancellor, Human Resources

Ms. Christine Helwick

General Counsel

Dr. Keith Boyum

Associate Vice Chancellor, Academic Affairs

Officers and Administrators

As of April 2008

For a complete listing of SJSU administrators, faculty and staff, please consult the current online SJSU Faculty and Staff Directory at <https://sjsuone.sjsu.edu/sjuphonebook/>

Executive	SJSU FOUNDATION	Student Affairs
President Don W. Kassing	Chief Operating Officer Mary Sidney	Vice President for Student Affairs Veril L. Phillips
Executive Assistant to the President Gerry Selter	GRADUATE STUDIES AND RESEARCH	Associate Vice President for Campus Life Cathy Busalacchi
Special Assistant to the President Rona Halualani	Associate Vice President Pam Stacks	Associate Vice President for Student Services Eloise Stiglitz
Intercollegiate Athletics	Associate Dean Rhea Williamson	Assistant Vice President for Student Affairs Sharon Willey
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Faculty Athletics Representative B.J. Campsey	INTERNATIONAL AND EXTENDED STUDIES	Student Conduct and Ethical Development
Compliance for Athletics Director: Etienne Thomas	Associate Vice President and Dean Mark Novak	Director: Debra Y. Griffith
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Vice Provost, Academic Administration & Personnel Charles Whitcomb	Studies in American Language Director: Karen O'Neill	Enrollment and Academic Services
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Associate Vice President Joan Merdinger	Dean Ruth E. Kifer	Financial Aid and Scholarships Director: Colleen Brown
Assistant Associate Vice President Bradley Davis	Associate Dean Vacant	Information Systems Director: Andrew Marcontell
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Associate Vice President, Academic Technology Mary Jo Gorney	Vice President and Chief Financial Officer Rose Lee	Pre-College Programs Director Frank Castillo
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Associate Dean, Curriculum Vacant	Associate Vice President, Finance Becka Paulsen	Testing Analyst: Derrick Koh
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Articulation Officer: Terri Eden	Associate Vice President, University Computing and Telecommunications Don Baker	Visitor Relations and Admission Counseling Manager: Marcella Cephas Anthony
Assessment Director: Jacqueline Snell	Bursar's Office Bursar: Marlene Anderson	MOSAIC Cross Cultural Center Coordinator: Hyon Chu Yi-Baker
Community Service Learning Director: Elena Klaw	Procurement and Support Services Director: Norma Lorigo	Student Health Center Director: Roger Elrod
Learning Assistance Resource Center (LARC) Director: Alice Ting	University Police Chief: Andre L. Barnes	Student Involvement Director: Richard C. Kelley
Metropolitan University Scholars Experience (MUSE) Director: Nancy Eldred		University Housing Services Director: Susan Hansen
Peer Mentor Program Director: Andrew Wood		University Ombudsman Savander Parker

University Advancement

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Spartan Bookstore
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Colleges

College of Applied Sciences and Arts

Interim Dean
Barbara Conry

Interim Associate Dean
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Aerospace Studies
Chair: Rick Moxley

Health Professions
Interim Director: Gregory Payne

Health Science
Chair: Kathleen Roe

Hospitality, Recreation, and Tourism Management
Chair: Randy Virden

Journalism and Mass Communications
Director: William Briggs

Justice Studies
Chair: Ann Lucas

Kinesiology
Chair: Shirley Reekie

Library and Information Science
Director: Kenneth Haycock

Nursing
Director: Jayne Cohen

Nutrition, Food Science, and Packaging

Chair: Lucy McProud

Occupational Therapy

Chair: Heidi Pendleton

Social Work

Director: Alice Hines

College of Business

Interim Dean

Nancie Fimbel

Associate Dean, Academic and Undergraduate Affairs

Vacant

Interim Associate Dean, Donald and Sally Lucas Graduate School of Business

Lee Jerrell

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Management Information Systems

Chair: Tim Hill

Marketing

Chair: Joseph Giglierano

Organization and Management

Chair: William Jiang

Student Advisement Center

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Connie L. Lurie College of Education

Dean

Susan Meyers

Associate Dean

Elaine Chin

Credential Services Coordinator

Vacant

Child and Adolescent Development

Chair: Toni Campbell

Communicative Disorders and Sciences Program

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Counselor Education

Chair: Xialou Hu

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Chair: Noni Reis

Elementary Education Program

Chair: Carolyn Nelson

Instructional Technology

Program Coordinator: Vacant

Secondary Education

Chair: Cathy Buell

Special Education

Chair: Christine Hagie

Charles W. Davidson College of Engineering

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Aviation

Acting Chair: Ali Zargar

Chemical Engineering/Materials Engineering

Chair: Emily Allen

Civil and Environmental Engineering

Chair: Vacant

Computer Engineering

Chair: Sigurd Meldal

Electrical Engineering

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Industrial and Systems Engineering

Chair: Louis Freund

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Chair: Bradley Stone

Computer Science

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Geology

Chair: Richard Sedlock

Marine Science – Moss Landing Marine Labs

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Chair: Bradley Jackson

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Chair: Alison Bridger

Nuclear Science Facility

Director: Herbert Silber

Physics & Astronomy

Chair: Kiumars Parvin

College of Social Sciences

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Chair: Charles Darrah

Communication Studies

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Chair: Lydia Ortega

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Chair: Rachel O'Malley

Geography

Chair: Richard Taketa

Global Studies

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Chair: Patricia Hill

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