Single Subject Teaching Majors Subject to Revision

All majors for the Single Subject Teaching Credential have been submitted to the Commission on Teacher Credentialing for approval as waivers from subject matter examinations. Consult appropriate department to verify current program requirements.

Deadlines
1. Dropping courses will be permitted with no penalty or restriction only until the end of the tenth day of classes.
2. Adding courses or complete withdrawal from the University will be allowed without penalty or restriction until the end of the fifteenth day of classes.
3. Change of grading option will NOT be permitted after the fifteenth day of classes.

For additional information consult
- Director of Admissions and Records, AD-1st Floor
- Director of Athletics, MPE-114
- Director of Health Services, 5300 Campanile Dr.
- Director of Financial Aid, CL-122
- Director of Housing, 6050 Montezuma
- Admissions and Records, AD-1st Floor
- Dean of the Graduate Division, AD-220
- Dean, 720 Heber Ave., Calexico, CA
- University Librarian, Love Library
- Parking Coordinator, 5850 Hardy
- Counseling Services and Placement, 5868 Hardy
- Admissions and Records, AD-1st Floor
- Chair, Aerospace Studies, T-56
- Chair, Military Science, T-63
- Chair, Naval Science, PSFA-149
- Scholarship Office, CL-109
- Counseling Services and Placement, 5870 Hardy
- Division of Undergraduate Studies, AD-223
- College of Extended Studies, 5530 Hardy
- Credentials Office, College of Education, ED-100
- Admissions and Records, AD-1st Floor
- Admissions and Records, AD-1st Floor
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## 1984-85 Academic Calendar

### SUMMER SESSIONS, 1984
- **May 28**
- **June 4-June 22**
- **July 4**
- **June 25-August 3**
- **June 25-July 27**
- **August 6-August 24**
- **June 4-July 13**

### FALL SEMESTER, 1984
- **August 1**
- **August 3**
- **August 10**
- **August 27**
- **August 28-29**
- **August 30-31**
- **September 3**
- **September 4**
- **September 4-7**
- **September 17**
- **September 18**
- **September 24**
- **September 24**
- **November 1**
- **November 22-25**
- **December 14**
- **December 15-22**
- **December 19**
- **December 23**
- **December 24-26**
- **December 28**
- **December 31**
- **December 31-January 1**

### SPRING SEMESTER, 1985
- **January 2**
- **January 2**
- **January 7-25**
- **January 18**
- **January 21**
- **January 22**
- **January 23**
- **January 24-25**
- **January 28**
- **January 28-31**
- **February 8**
- **February 11**
- **February 15**
- **February 15**
- **March 30**
- **April 1-7**
- **April 8**
- **May 7**
- **May 16**
- **May 17**
- **May 18-25**
- **May 27**
- **May 31**
- **May 31**
- **August 2**

### SUMMER SESSIONS, 1985
- **June 3-June 21**
- **July 4**
- **June 24-August 2**
- **June 24-July 26**
- **August 5-23**
- **June 3-July 12**

### Important Dates:
- **June 3**
  - Holiday—Memorial Day. Campus closed (no classes).
- **June 24**
  - Holiday—Independence Day. Campus closed (no classes).
- **May 31**
  - Holiday—Memorial Day. Campus closed (no classes).
- **May 27**
  - Holiday—Memorial Day. Campus closed (no classes).
- **August 2**
  - Holiday—Memorial Day. Campus closed (no classes).
- **November 30**
  - Last day to apply for a leave of absence for fall semester.
- **December 15-22**
  - Holiday—Independence Day.
- **December 19**
  - Last day to officially withdraw from the University for spring semester 1985 without penalty.
- **January 22**
  - First day, second semester.
- **February 15**
  - Last day to apply for refunds.
- **February 15**
  - Last day to add classes or change grading basis.
- **February 15**
  - Last day of classes before spring recess.
- **March 30**
  - Spring recess.
- **April 8**
  - Classes resume.
- **May 16**
  - Last day of classes before final examinations.
- **May 17**
  - Study and consultation day.
- **May 18-25**
  - Final examinations.
- **May 27**
  - Commencement. Refer to Spring Schedule of Classes for date.
- **August 2**
  - Last day to apply for a leave of absence for fall semester.
- **August 31**
  - Last day to apply for admission or readmission to San Diego State University for the spring semester 1985 accepted. Applications are accepted after August 31 only until enrollment quotas are met.
- **September 3**
  - Holiday—Labor Day. Campus closed (no classes).
- **September 4**
  - First day of classes.
- **September 17**
  - Late Registration.
- **September 18**
  - Last day to drop classes.
- **September 18**
  - Last day to apply for refunds.
- **October 1**
  - Last day to file application for bachelor's degree for January 1985 graduation.
- **December 23**
  - Winter recess begins.
- **December 24-26**
  - Holiday—Winter recess. Campus closed (no classes).
- **December 28**
  - Last day for disqualified students to apply for reinstatement to the University.
- **December 31**
  - Last date for nonresident students to change residence for spring semester 1985.
- **January 2**
  - Holiday—Memorial Day. Campus closed (no classes).
- **January 18**
  - Holiday—Independence Day. Campus closed (no classes).
- **January 25**
  - Applications for admission or readmission to San Diego State University for the spring semester 1985 accepted. Applications are accepted after August 31 only until enrollment quotas are met.
- **January 28**
  - Last day to apply for a leave of absence for spring semester.
- **January 29**
  - Holiday—Martin Luther King's Birthday. Campus closed (no classes).
- **February 8**
  - First day of classes.
- **February 15**
  - Late Registration.
- **February 15**
  - Last day to drop classes.
- **February 15**
  - Last day to apply for refunds.
- **February 15**
  - Applications for bachelor's degree for December 1985 graduation accepted.
- **March 30**
  - Spring recess.
- **April 7-17**
  - Classes resume.
- **April 8**
  - Applications for bachelor's degree for May and August 1986 graduation accepted.
- **May 16**
  - Last day of classes before final examinations.
- **May 17**
  - Study and consultation day.
- **May 18-25**
  - Final examinations.
- **May 27**
  - Commencement. Refer to Spring Schedule of Classes for date.
- **June 3**
  - Holiday—Memorial Day. Campus closed (no classes).
- **June 24**
  - Holiday—Independence Day.
- **June 26**
  - Term A (3 weeks).
- **June 27**
  - Term B (6 weeks).
- **June 28**
  - Term C (5 weeks).
- **July 1**
  - Term D (3 weeks).
- **July 3**
  - Term E (6 weeks).

### Key Dates:
- **January 2**
  - Grades due from instructors. (Noon deadline.)
- **January 25**
  - Last day of fall semester.
- **January 7-25**
Schedule of Fees

Fees are subject to change without advance notice by the Trustees of the California State University.

Fees must be paid at time of registration. Checks or charge slips accepted for exact amount of fees. Overpayments of $5.00 or less are refunded only upon request. (If your check or charge slip is returned by the bank for any reason, your registration will be canceled and you will be billed $10.00.) Payment of fees for advance registration or walk-through registration should be made by check, money order, or charge card. Checks to be made payable to SDSU. (Do not enclose cash.)

REGISTRATION FEES — ALL STUDENTS: On basis of units carried.

Auditors pay same fees as students carrying courses for credit. Nonresident and foreign students pay additional fees — see information below.

<table>
<thead>
<tr>
<th>Units Attempted</th>
<th>Undergraduate Registration Fee</th>
<th>Postbaccalaureate Registration Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 units – 5.9 units</td>
<td>$215.00</td>
<td>$233.00</td>
</tr>
<tr>
<td>6.0 or more units</td>
<td>$350.00</td>
<td>$368.00</td>
</tr>
</tbody>
</table>

The above fee also includes a Student Activity Fee of $10.00, a Student Union Fee of $16.00, a Facilities Fee of $3.00, an Instructionally Related Activities Fee of $15.00, Student Services load. Postbaccalaureate students pay an additional $19.00 State University Fee surcharge per semester regardless of unit load. Legal residents of California are not charged tuition.

Tuition for Nonresident Student (Foreign and Domestic)

(In addition to registration fees listed above.)

Tuition will be charged for all units attempted.

For fee-paying purposes, zero unit courses are counted as one unit.

Health insurance (mandatory for foreign students) — per year, approximately $17.00.

Health Insurance

VISA and Master Card bank credit cards may be used for payment of student fees.

Miscellaneous Instructional Course Charges

Miscellaneous instructional course charges are payable at student's option for the following courses:

- Art 225, 325, 425, 525, 526, 625, 627, 700D
- Educational Technology and Librarianship 404, 532, 540, 541, 542, 544, 546, 547, 548, 553, 571, 641, 642, 671, 676, 775
- Family Studies and Consumer Sciences 205A, 205B, 301, 302, 405, 480, 605
- Music 345

CREDIT CARDS

VISA and Master Card bank credit cards may be used for payment of student fees.

LIABILITY FOR PAYMENT

Students are liable for payment of all registration fees related to units held on or added after the close of business on the fourteenth day following the commencement of instruction. Foreign and nonresident students are liable for tuition related to all units held, except as provided for by the refund policy.

REFUND OF FEES

Details concerning fees which may be refunded, the circumstances under which fees may be refunded, and the appropriate procedure to be followed in seeking refunds may be obtained by consulting Section 41803 (parking fees), 41913 (nonresident tuition), 42019 (housing charges), and 41802 (all other fees) of Title 5, California Administrative Code. In all cases it is important to act quickly in applying for a refund. Information concerning any aspect of the refund of fees may be obtained from the Cashier's Office.

Refund of Registration Fees

Complete Withdrawal. To be eligible for refund of registration fees, a student withdrawing completely from the University (from all classes) MUST obtain a withdrawal card from the Office of Admissions and Records and file a refund application with the Cashier's Office, CL-108, not later than 14 days following the commencement of instruction. All but $10.00 will be refunded. Details of notification from Admissions and Records that appropriate action has been taken and (2) return of your registration sticker and application for refund to the Cashier's Office.

Reduction of Unit Load. A student dropping from six units or more to 5.9 units or less, or a student who paid maximum fees but never obtained over 5.9 units, MUST file a refund application with the Cashier's Office, CL-108, not later than 14 days following the commencement of instruction. All but $10.00 will be refunded. FOR ADDITIONAL INFORMATION, CONTACT THE CASHIERS OFFICE OR TELEPHONE 265-5253.

Disqualified and Leave of Absence Candidates. If your registration has been canceled due to disqualification or by obtaining an approved leave of absence, registration fees will be refunded upon (1) notification from Admissions and Records that appropriate action has been taken and refund application for refund to the Cashier's Office.
Refund of Nonresident and Foreign Student Tuition

Tuition paid for a course scheduled to continue for an entire semester may be refunded in accordance with the following schedule, if application is received by the Cashiers Office within the following time limits:

<table>
<thead>
<tr>
<th>Time Limit</th>
<th>Amount of Refund</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Before or during the first week of the semester</td>
<td>100 percent of fee</td>
</tr>
<tr>
<td>(2) During the second week of the semester</td>
<td>90 percent of fee</td>
</tr>
<tr>
<td>(3) During the third week of the semester</td>
<td>75 percent of fee</td>
</tr>
<tr>
<td>(4) During the fourth week of the semester</td>
<td>50 percent of fee</td>
</tr>
<tr>
<td>(5) During the fifth week of the semester</td>
<td>25 percent of fee</td>
</tr>
<tr>
<td>(6) During the sixth week of the semester</td>
<td>None</td>
</tr>
</tbody>
</table>

Refund of Parking Fees

This schedule of refunds refers to calendar days, commencing on the date of the term when instruction begins. Nonreserved space per semester:

<table>
<thead>
<tr>
<th>Period</th>
<th>Amount of Refund</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-30 days</td>
<td>100 percent of fee</td>
</tr>
<tr>
<td>31-60 days</td>
<td>75 percent of fee</td>
</tr>
<tr>
<td>61-90 days</td>
<td>50 percent of fee</td>
</tr>
<tr>
<td>91-end of term</td>
<td>25 percent of fee</td>
</tr>
</tbody>
</table>

LATE REGISTRATION/FEES PAYMENT FEE

This nonrefundable fee pertains to those students who register after classes begin or pay fees (thus completing the registration process) past established deadlines. The Cashiers Office should be consulted for further details.

APEALS PROCESS

An appeals process exists for students who believe that individual circumstances warrant exceptions from published policy. Students should file a "Petition for Special Consideration" obtainable at the Cashiers Office.

SUMMER SESSION FEES

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount (per unit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition and fees</td>
<td>$64.00</td>
</tr>
<tr>
<td>Parking fees (nonreserved spaces)</td>
<td></td>
</tr>
<tr>
<td>Entire summer period</td>
<td></td>
</tr>
<tr>
<td>Five- and six-week terms</td>
<td>15.00</td>
</tr>
<tr>
<td>Three-week terms</td>
<td>9.00</td>
</tr>
<tr>
<td>EXTENSION COURSE FEES</td>
<td></td>
</tr>
<tr>
<td>Extension/Open University</td>
<td>(per unit) $49.00</td>
</tr>
</tbody>
</table>

EXEMPTIONS

Students under Public Law 894, 87-815, California state veterans' dependents, or state rehabilitation programs will have fees paid for tuition and materials and service under provisions of these respective programs.

ALAN PATTEE SCHOLARSHIPS

Children of deceased public law enforcement or fire suppression employees, who were duties, are not charged fees or tuition of any kind at any California State University campus, qualifying for these benefits are known as Alan Pattee scholars. For further information contact the Admissions and Records Office, which determines eligibility.

STUDENT SERVICES FEE

The Student Services Fee, established by the Board of Trustees in January 1975, is a reimbursement to the General Fund used to provide the following student support services:

Counseling. Counseling assists students in personal growth, value formation, and the resolution of personal problems which, especially in the period of young adulthood, may impede the learning process.

Testing. The Testing Office administers and interprets and, when necessary, develops tests used by Counseling, Career Planning and Placement, and other student support services. It also administers academic placement and advanced placement tests, and conducts student profile surveys used in assessing the need for specific student support programs.

Placement. Career Planning Services focus the student on occupational and career opportunities related to a particular field of study. The Placement Office also assists students in preparing resumes, improving interviewing techniques, and in securing part-time employment while students and full-time employment following graduation.

Social/Cultural Development. The Social/Cultural Development Program provides both opportunities and direction for students in developing organizational skills, planning and implementing programs, and in working effectively with others to achieve a common goal.

Health Services. Student Health Services aids students to maintain physical and mental health and to avoid health-related problems which prevent active participation in the educational program.

Financial Aid Administration. Although funds for grants and loans are provided by federal and state governments and through private benefactors, the administrative staff required to assist students in securing needed financial support is funded through Student Services Fee reimbursements.

Housing Administration. Not all campuses offer on-campus housing for students. Each campus, however, provides services to all students in their efforts to secure suitable housing near the campus and at a reasonable cost.

Vice President for Student Affairs. Fifty percent of the administrative cost for coordination of student support programs has been funded by Student Services Fee revenue since 1973-74. The Vice President for Student Affairs provides leadership and direction for fee-supported programs as well as for other programs and personnel (e.g., residence halls, student union, EOP, disabled students) not receiving Student Services Fee support.

Procedure for the Establishment or Abolishment of a Student Activity Fee

The law governing The California State University provides that a student activity fee may be established by student referendum with the approval of two-thirds of those students voting. The Student Activity Fee was established at San Diego State University by student referendum in 1955. The same fee can be abolished by a similar two-thirds approval of students voting on a referendum called for by a petition signed by 10 percent of the regularly enrolled students. (Education Code, Section 89300.) The level of the fee is set by the Chancellor. An increase in the student activity fee may be approved by the Chancellor only following a referendum on the fee increase approved by a majority of students voting. Student activity fees support a variety of cultural and recreational programs, child care centers, and special student support programs.

Debts Owed to the Institution

Should a student or former student fail to pay 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 Administrative Code, Sections 42380 and 42381). For example, the institution may withhold permission to receive official transcripts of grades from any person owing a debt. If a student believes that he or she is owed part or all of an unpaid obligation, the student should contact the campus debt office, which determines eligibility.

The Cashiers Office, or another office on campus to which the student may be referred by the Cashiers Office, will review the pertinent information, including information referred by the Cashiers Office, and advise the student of its conclusions with respect to the debt.
Organization and Administration

The California State University
Board of Trustees
Office of the Chancellor
San Diego State University
Advisory Board
Administration
Colleges, Schools
Departments, Programs
The California State University

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, 16 of the 19 campuses have the title "University."

The oldest campus—San Jose State University—was founded as a Normal School in 1857 and became the first institution of public higher education in California. The newest campus—California State College, Bakersfield—began instruction in 1970.

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 on the respective campuses.

The Trustees, the Chancellor and the Presidents develop systemwide policy, with actual implementation at the campus level taking place through broadly based consultative procedures 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 multi-purpose institutions, offer undergraduate and graduate instruction for professional and occupational goals as well as broad liberal education. All of the campuses require for graduation a basic program of “General Education—Breath Requirements” regardless of the type of bachelor’s degree or major field selected by the student.

The CSU offers more than 1,500 bachelor’s and master’s degree programs in some 200 subject areas. Nearly 500 of these programs are offered so that students can complete all upper division and graduate requirements by part-time late afternoon and evening study. In number of doctoral degrees are offered jointly with the University of California and with private universities in California.

The Consortium of The California State University offers the resources of the 19 campuses to offer regional and statewide off-campus degree, certificate, and credential programs to individuals who find it difficult or possible to attend classes on a campus. In addition to Consortium programs, enrollment in fall 1983 totaled approximately 315,000 students, who were taught by a faculty of 18,500. Last year the system awarded over 50 percent of the bachelor’s degrees and 30 percent of the master’s degrees granted in California. More than 900,000 persons have graduated from the nineteen campuses since 1960.

The Consortium of The California State University

The Consortium of the CSU—"The 1,000-Mile Campus"—is a separate, fully accredited, degree-granting entity of the CSU. It draws on the combined resources of the 19 campuses to offer external statewide and regional degree, certificate, and teaching credential programs impossible to participate in regular on-campus programs. Instruction is thus provided students geographic areas throughout California.

Full and part-time CSU faculty, as well as qualified experienced practitioners, meet the specific needs of employees in business, industry, education, or government leading to bachelor’s or master’s degrees. Credit and course work are transferable statewide.
Average Annual Cost of Education and Sources of Funds per Full-time Equivalent* Student in The California State University

The 19 campuses and the Chancellor's Office of The California State University are financed primarily through funding provided by the taxpayers of California. The total State appropriation to the CSU for 1983/84, including capital outlay, is $929,650,300. The total cost of education for the 19 campuses is $1,199,787,540 which provides support for a projected 242,460 full-time equivalent (FTE) students.

The average total cost of education per student is $4,948. There is a cost index of 2.006.$1,199,787,540 is the average cost per student. This figure does not include the capital outlay appropriation of $13,359,000. The average costs paid by a student include the State University Fee, Student Services Fee, Application Fee, Catalog Fee, and Nonresident Tuition. Individual students may pay less than $1,006 depending on whether they are part-time, full-time, resident, or nonresident students.

Total Cost

- State Appropriation: $1,199,787,540
- Student Fee Support: $916,291,300
- Support from Other Sources: $243,896,427

Total Cost per Student (FTE)

- Average Cost Per Student (FTE)*: $4,948
- Percentage: 100.0

Average Cost Per Student (FTE)

- State Appropriation: $4,948
- Student Fee Support: $3,779
- Support from Other Sources: $1,006

*For budgetary purposes, full-time equivalent (FTE) translates total head count into total academic student load equivalent to 15 units per term. Some students enroll for more than 15 units; some students enroll for fewer than 15 units.

The average cost of education per student is $4,948. This amount includes payments made to the students in the form of financial aid, including all fully reimbursed programs contained in State appropriations, but excluding capital outlay appropriations. The average cost of education is determined by dividing the total cost by the total appropriation, excluding capital outlay appropriations, Student Fee Support, and Support from Other Sources.

Thus, excluding costs which relate to capital outlay (i.e., building amortization), the average cost of education per FTE student is $4,948. Of this amount, the average student fee support nonresident students.

Trustees of The California State University

<table>
<thead>
<tr>
<th>Ex Officio Trustees</th>
<th>State Capitol</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Hon. George Deukmejian</td>
<td>Sacramento 95814</td>
</tr>
<tr>
<td>Governor of California</td>
<td>State Capitol</td>
</tr>
<tr>
<td>Lieutenant Governor of California</td>
<td>Sacramento 95814</td>
</tr>
<tr>
<td>The Hon. Leo T. McCarthy</td>
<td>State Capitol</td>
</tr>
<tr>
<td>Speaker of the Assembly</td>
<td>Sacramento 95814</td>
</tr>
<tr>
<td>The Hon. Willie L. Brown, Jr.</td>
<td>721 Capitol Mall</td>
</tr>
<tr>
<td>The State Superintendent of Public Instruction</td>
<td>Sacramento 95814</td>
</tr>
<tr>
<td>Dr. W. Ann Reynolds</td>
<td>400 Golden Shore</td>
</tr>
<tr>
<td>Chancellor of The California State University</td>
<td>Long Beach 90802-4275</td>
</tr>
</tbody>
</table>

Appointed Trustees

Appointments are for a term of eight years, except for a student Trustee, alumni Trustee, and faculty Trustee whose terms are for two years. Terms expire in the year in parentheses. Names are listed in order of appointment to the Board.

Officers of the Trustees

Governor George Deukmejian
President
Mr. John F. O'Connell
Chair

Ms. Wallace Albertson
Vice Chair
Chancellor W. Ann Reynolds
Secretary-Treasurer
### The California State University

<table>
<thead>
<tr>
<th>University/College</th>
<th>Address</th>
<th>City, State, Zip Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>California State College, Bakersfield</td>
<td>9001 Stockdale Highway</td>
<td>Bakersfield, California 93311-1099</td>
</tr>
<tr>
<td></td>
<td>Dr. Tomas A. Arciniega, President</td>
<td>(805) 833-2011</td>
</tr>
<tr>
<td>California State University, Chico</td>
<td>1st &amp; Normal Streets</td>
<td>Chico, California 95929</td>
</tr>
<tr>
<td></td>
<td>Dr. Donald R. Gerth, President</td>
<td>(213) 516-3300</td>
</tr>
<tr>
<td>California State University, Fullerton</td>
<td>Shaw and Cedar Avenues</td>
<td>Fullerton, California 92834</td>
</tr>
<tr>
<td></td>
<td>Dr. Jewel Plummer Cobb, President</td>
<td>(714) 773-2011</td>
</tr>
<tr>
<td>California State University, Hayward</td>
<td>Hayward, California 94542</td>
<td>Hayward, California 94542</td>
</tr>
<tr>
<td></td>
<td>Dr. Ellis E. McCune, President</td>
<td>(415) 881-3000</td>
</tr>
<tr>
<td>California State University, Los Angeles</td>
<td>1250 Bellflower Boulevard</td>
<td>Los Angeles, California 90840</td>
</tr>
<tr>
<td></td>
<td>Dr. James M. Rosser, President</td>
<td>(213) 498-4240</td>
</tr>
<tr>
<td>California State University, Northridge</td>
<td>18111 Northhoff Street</td>
<td>Northridge, California 91330</td>
</tr>
<tr>
<td></td>
<td>Dr. James W. Cleary, President</td>
<td>(213) 885-1200</td>
</tr>
</tbody>
</table>

### Office of the Chancellor

#### The California State University

<table>
<thead>
<tr>
<th>Address</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>400 Golden Shore</td>
<td>(213) 590-5506</td>
</tr>
</tbody>
</table>

### San Diego State University Advisory Board

<table>
<thead>
<tr>
<th>Name</th>
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</thead>
<tbody>
<tr>
<td>Terry Brown</td>
</tr>
<tr>
<td>Larry Cushman</td>
</tr>
<tr>
<td>Ron L. Fowler</td>
</tr>
<tr>
<td>Gwendolyn Gildred</td>
</tr>
<tr>
<td>Kenneth N. Golden</td>
</tr>
<tr>
<td>Lee Grissom, Chairman</td>
</tr>
<tr>
<td>Yvonne W. Larsen</td>
</tr>
</tbody>
</table>

### Associate Members

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robert Chapman</td>
<td>President, San Diego State University</td>
</tr>
<tr>
<td>Sharon Considine</td>
<td>President, San Diego State University</td>
</tr>
<tr>
<td></td>
<td>Alumni and Associates</td>
</tr>
<tr>
<td></td>
<td>Aztec Athletic Foundation</td>
</tr>
</tbody>
</table>
Principal Officers of Administration

President of the University: Thomas B. Day
Vice President for Academic Affairs: Albert W. Johnson
Vice President for Business and Financial Affairs: William L. Erickson
Vice President for Student Affairs: William R. Newby
Director of the Vice President for Student Affairs: Leslie F. Yerger
Director of University Telecommunications: Paul J. Steen

Administration

Office of the President
Executive Assistant to the President: Wanda Alma Marquez
Coordinators of Affirmative Action: Robert E. McCabe
Augustine S. Chavez

Office of the Vice President for Academic Affairs
Associate Vice President for Academic Affairs: Frank A. Medeiros
Dean of Academic and External Relations: Joyce M. Gattas
Dean of Academic Services: Ethan A. Singer
Dean of University Computer Center: Jane K. Smith
Dean of Learning Resource Center: Kurt Eismann
Dean of University Libraries: William A. Broderick

Chair of The Senate
Monroe K. Rowland

Office of the Vice President for Student Affairs
Assistant to the Vice President: Elizabeth J. Brilliant
Director of Administrative and Business Services: Joseph F. Vargas
Director of Personnel Services: Sally F. Roush
Director of Facilities Planning: Daniel R. Taylor
Director of Internal and Auxiliary Research: Charles H. Johnson
Director of Physical Plant: Marjorie C. Feen
Director of Public Safety: John J. Carpenter
Director of Environmental Health and Research Safety: Craig C. Johnson
Director of Environmental Health and Safety: John J. Carpenter

Office of the Vice President for Student Affairs
Assistant Vice President for Student Affairs: Carl F. Emerich
Assistant Vice President for Student Affairs: Frank F. Barnes
Assistant Vice President, Budget and Personnel, Student Affairs: Sharon L. Edwards

Ombudsman
Coordinator of Campus Student Discipline: Carol M. Goerke
Coordinator of Student Support Services: E. G. A. Bacon
Coordinator of Student Support Services: Nancy C. Sproitel
Coordinator of Educational Opportunity and Minority Programs: George E. Hutchinson
Coordinator of Center for Counseling Services and Placement: Augustine S. Chavez
Coordinator of International Student Services: Marvalene H. Styles
Coordinator of Housing and Residential Life: Kevin Patrick, M.D.
Coordinator of Housing and Residential Life: Michael B. Hockett
Coordinator of Student Activities Academic Support Services: Michael A. Irwin

Office of the Director of University Affairs
General Manager, KPBSTV: Robert R. Rinchart
Director of University Affairs: Paul J. Steen
Publications Manager: Leslie F. Yerger
Design Center Manager: William McDonald
News Service Director: William McDonald
Director of Intercollegiate Athletics: Gerald B. Elliott
Director of Aztec Athletic Foundation: R. McRae

Auxiliary Organizations
San Diego State University Foundation
President: Thomas B. Day
Vice President: William R. Newby
General Manager: Harry R. Albers
Manager: The Associated Students of San Diego State University
President: Harvey J. Goodfriend
Executive Director: Chris Wakeman

Colleges, Schools, Departments and Programs

COLLEGE OF ARTS AND LETTERS
Associate Dean: Robert C. Detwiler, Dean
Asst. Dean for Student Affairs: Edward R. Mendez
Academic Skills Center: Donald D. Bates
Academic Studies: Shirley N. Weber
American Studies: Clifford E. Shaffer
Anthropology: Charles D. Hamilton
Classical and Oriental Languages and Literatures: Robert E. Brackley
English and Comparative Literature: Dan McLeod
French and Italian Languages and Literatures: Arnold G. Branham
Geography: C. J. Griffin
German and Russian Languages and Literatures: Julian H. Wulitk
History: Dennis E. Borge
Linguistics: Charlotte Webb
Mexican-American Studies: William A. Vega
Religious Studies: Ivan Arts
Sociology: Ernesto Barrera
Spanish and Portuguese Languages and Literatures: Barbara Watson
Women's Studies: Allan R. Bailey, Dean

COLLEGE OF BUSINESS ADMINISTRATION
Associate Dean, Academic Affairs: William F. Barber
Associate Dean, Graduate Studies: Harold K. Brown
Associate Dean, External Relations: Anna R. Newton
Assistant Dean for Student Affairs: Richard A. Samuelson
School of Accountancy: Pieter A. Vandenbos
Finance: Norman E. Sondak
Information Systems: John A. Weeks
Management: Thomas W. Bailey
Marketing: Dennis G. Gooler, Dean

COLLEGE OF EDUCATION
Associate Dean: John D. Chamley
Assistant Dean: Jean Ramage
Psychological Education: Raymond LaRue
Teacher Education: Patrick L. Harrison
Educational Technology and Librarianship: Monica Murphy (Acting)
Multicultural Education: Ana Maria Rodriguez
Higher Education Programs: John G. McLevage
Cooperative Education: Patricia T. Cegiela
Special Education: George T. Craig, Dean

COLLEGE OF ENGINEERING
Associate Dean: George T. Craig, Dean
Assistant Dean for Student Affairs: John G. McLevage
Aerospace Engineering and Engineering Mechanics: Frank Stratton
Civil Engineering: John F. Conly
Electrical Engineering: Fang-Hui Chou
Mechanical Engineering: Mei-Shu Lin

COLLEGE OF HUMAN SERVICES
Associate Dean: Barry W. Jones
Assistant Dean for Student Affairs: Robert E. Novak (Acting)
Communication Disorders: Douglas Schafeldt
Graduate School of Public Health: Warren D. Boskin (Acting)
School of Nursing: Dolores A. Wozniak
School of Social Work  Anita S. Harbert
Clinical Training Center  Marilyn Rumelhart

COLLEGE OF PROFESSIONAL STUDIES AND FINE ARTS  Merrill J. Lesley, Acting Dean
Associate Dean  W. Edward Morton
Assistant Dean for Academic Affairs  Susan Hellweg
Assistant Dean for Student Affairs  Carol Robasciotti
Assistant Dean for Physical Resources  Fred Hammond
Director of Development and Public Affairs  Michael Lewis
Aerospace Studies  Lt. Col. Terry Boyer
Art  Fredrick J. Orth
Drama  Margaret McKerrow (Acting)

School of Family Studies and Consumer Sciences  Gwen C. Cooke
Industrial Studies  Dennis Dirksen
Military Science  Lt. Col. Michael Kaul
Music  Millard Biggs

Physical Education  Capt. Render Crayton
School of Public Administration and Urban Studies  B. Robert Carlson
Recreation  Mary R. Duncan
Speech Communication  Stephen W. King
Telecommunications and Film  Hayes L. Anderson

COLLEGE OF SCIENCES  Donald R. Short, Dean
Associate Dean  James W. Neel
Associate Dean  John D. Schopp
Assistant Dean for Student Affairs  Gordon L. Shackelford
Astronomy  C. T. Daub
Biology  Boyd Collier
Chemistry  Kenneth D. Johnson
Geological Sciences  Stephen B. W. Roeder
Mathematical Sciences  Patrick L. Abbott
Microbiology  R. Lee Van de Wetering
Natural Science  Harold B. Moore
Physiology  Dale E. Ingmanson
Psychology  Lowell J. Burnett
Zoology  Alan J. Litrownik

NORTH COUNTY CENTER  Richard D. Estes
Associate Dean of University Programs  Robert J. Behm
Director of Operations  Lawrence A. Cinger
Assistant Dean for Student Affairs  Sandra R. Kuchier

IMPERIAL VALLEY CAMPUS  David Ballesteros, Dean
Associate Dean for Academic Affairs  Armando Arias, Jr.
Assistant Dean for Administration  Dana W. Murphy
Assistant Dean for Student Affairs  Cynthia D. Flores
Director of Admissions and Records  Kathleen Russum

OFFICE OF THE DEAN OF THE GRADUATE DIVISION AND RESEARCH  James W. Cobble, Dean
Associate Dean  Lawrence A. Feinberg
Assistant Dean  Bradley N. Bartel

OFFICE OF THE DEAN OF UNDERGRADUATE STUDIES  Arthur W. Schatz
Associate Dean  Bonnie H. Neumann, Dean
Assistant Dean  Carole Rother

OFFICE OF THE DEAN OF EXTENDED STUDIES  Charlotte B. Yesselman
Director of Special Sessions and Extension  William P. Locke, Dean
Director of Professional Development  Larry G. Cobb
Director of Administrative Services  Karen Horn
Director of American Language Institute  Paula Kelly
Director of Retired Adults Program  Ann Johna

General Information
Special Programs and Services
Financial Aid
Student Services
General Information

San Diego State University
San Diego State University was founded on March 13, 1897 for the training of elementary school teachers. The seven faculty and ninety-one students of the then Normal School's first class met on November 1, 1898 in temporary quarters downtown while the first unit of the main building of the campus was under construction at Park Boulevard where El Cajon Boulevard begins.

The curriculum was limited at first to English, history and mathematics, but it broadened rapidly under the leadership of Samuel T. Black, who left the position of State Superintendent of Public Instruction to become the first President (1898-1910).

Under the vigorous administration of the second president, Edward L. Hardy (1910-1935), the School was reorganized as a four-year State Teachers' College in 1921, and control was transferred from a local board of trustees to the State Board of Education. In the same year, the two-year San Diego Junior College, the antecedent institution to the present Community Colleges, was incorporated as a branch of San Diego State, where it remained through 1964.

It became clear early that the only collegiate institution in San Diego would soon outgrow its 17-acre site, and a campaign was begun in the 1920s to build a new campus. The Legislature agreed, provided the city furnish a new site and buy the old one. In 1928 the present campus on what was then the far eastern border of the city was approved by the electorate.

In February 1931, the college moved to the seven mission-style buildings of the present campus, surrounding what is still called the Main Quad. In 1935, the Legislature removed the word "Teachers" from the name of the institution and authorized the expansion of degree programs into areas other than teacher preparation. In the same year, Walter R. Hepner (1935-1952) was appointed president, and the institution entered a period of slow growth and then, with the coming of war, contraction. At the end of World War II, enrollment had fallen to 1,918 (1952-1971), enrollments increased phenomenally until with some 30,000 students San Diego State is today one of the largest institutions in the State. In 1960, the College became a part of the newly created California State College system, under a statewide Board of Trustees and a Chancellor. In 1971, recognizing that the institution had in fact achieved the status of a university, the Legislature renamed the system The California State University and Colleges, and shortly afterward renamed this institution San Diego State University.

Acting President Donald E. Walker (1971-1972), President Brage Golding (1972-1977), and Acting President Trevor Colbourn (1977-1978) were followed by the sixth president Thomas B. Day (1978-) who faces problems and opportunities of a magnitude undreamed of 80 years ago.

New buildings added in recent years include the Aztec Center, the first student union Recital Hall, and the 307,000 square-foot Malcolm A. Love Library, with its ample reading areas Humanities classroom buildings make the most recent additions to the campus physical and diverse urban setting. The University recognizes its obligations to serve in the several roles and distinction in these pursuits.

The University now offers bachelor's degrees in 72 areas, the master's in 53, and the joint doctorate in 4. A remarkable 88 percent of the teaching faculty possess the doctorate in those disciplines where it is the standard terminal degree. A chapter of Phi Beta Kappa was inaugurated at the University in 1974, joining Phi Kappa Phi and many other national honorary societies on campus.

Mission and Goals of San Diego State University
San Diego State University is a multipurpose institution of higher education located in a large and diverse urban setting. The University recognizes its obligations to serve in the several roles and distinction in these pursuits.

The University seeks to provide an environment that encourages the intellectual development of students. Through its programs in the liberal arts and sciences the University aspires to have students understand themselves and their world; learn about their cultural, social, physical, and institutional surroundings; and understand the ways in which people of this and other societies, past and present, interact with each other and their environments. The professional programs of the University are designed to prepare students for the proficient and successful practice of a profession. At the graduate level the University is concerned with developing potential leaders in a wide spectrum of social, economic, scientific, technical, educational, and cultural fields.

Closely related to its teaching mission are the University's diverse research efforts. Student and faculty involvement in research exemplifies the manner in which knowledge is obtained and also expands the boundaries of our collective understanding. Graduate study at San Diego State University, both at the master's and doctoral level, places particular emphasis on creative scholarship, original research, and the development and utilization of research techniques.

Located in the heart of a large and diverse metropolitan center, the University makes use of the vast social, cultural, scientific, and technical resources of this region to enrich its programs and spur its research. Conversely, through its teaching, research, and various services, the University endeavors to identify and be responsive to the needs of the regional, national, and international communities that it serves. Furthermore, San Diego State University seeks cooperative efforts and programs with other institutions of higher education.

In sum, the mission of San Diego State University is to provide the best possible education for its undergraduate and graduate students, to contribute to knowledge and the solution of significant problems through its research, and to serve the people of California and the nation.

Institutional and Financial Assistance Information
The following information concerning student financial assistance may be obtained from the Financial Aid Office, CL-122, 265-6323.

1. Student financial assistance programs available to students who enroll at San Diego State University;
2. The methods by which such assistance is distributed among student recipients who enroll at San Diego State University;
3. The means, including forms, by which application for student financial assistance is made and requirements for accurately preparing such applications;
4. The rights and responsibilities of students receiving financial assistance; and
5. The standards which the student must maintain in order to be considered to be making satisfactory progress for the purpose of establishing and maintaining eligibility for financial assistance.

The following information concerning the cost of attending San Diego State University is available from the Financial Aid Office, CL-122, 265-6323.

This information includes:
1. Fees and tuition;
2. Estimated costs of books and supplies;
3. Estimates of typical student room and board costs or typical commuting costs; and
4. Any additional costs of the program in which the student is enrolled or expresses a specific interest.

Information concerning the refund policy of San Diego State University for the return of unearned tuition and fees or other refundable portions of costs is available from the University Cashiers Office, CL-108: 265-5253.

Information concerning the academic programs of San Diego State University may be obtained from the Office of the Vice President for Academic Affairs, AD-206, 265-6542.

This information may include:
1. The current degree programs and other educational and training programs;
2. The instructional, laboratory, and other physical plant facilities which relate to the academic program;
3. The faculty and other instructional personnel; and
4. Data regarding student retention at San Diego State University and, if available, the number and percentage of students completing the program in which the student is enrolled or expresses interest; and
5. The names of associations, agencies, or governmental bodies which accredit, approve, or license the institution and its programs, and the procedures under which any current or prospective student may obtain or review upon request a copy of the documents describing the institution's accreditation, approval, or licensing.

Information regarding special facilities and services available to handicapped students may be obtained from the Director of Disabled Student Services, Campus Lab 110A, telephone 265-6473.

Career Placement
The campus will furnish, upon request, information concerning the subsequent employment of students who graduate from San Diego State University. This information includes data concerning average starting salary and the percentage of previously enrolled students who have found employment. The information provided may include data collected from either graduates of the campus or graduates of all campuses in the California State University, CL-114, 265-6966.

Faculty Office Hours
All faculty members are required to hold five regularly scheduled office hours during the week to allow for student consultation. A schedule of those hours is posted outside each faculty member's office door.

Honor Societies
Phi Beta Kappa and Phi Kappa Phi are two of the national honor societies recognizing academic excellence for undergraduate students. Election to membership in the Nu chapter of Phi Kappa Phi is based on high scholarship and professional integrity. To be considered for election, students must ordinarily be enrolled in the College of Arts and Letters or the College of Sciences. Students who have completed work in liberal arts and sciences must have an average grade of B or better in all courses taken outside the major as well as to grades earned. No right of election shall accrue to students not meeting the requirements of the chapter.

Degrees and Certificates
San Diego State University offers the following degrees and certificates:
- Bachelor of Arts
- Bachelor of Science
- Bachelor of Music
- Bachelor of Vocal Education
- Master of Arts
- Master of Science
- Master of Business Administration
- Master of City Planning
- Master of Fine Arts (Art, Drama)
- Master of Music
- Master of Public Administration
- Master of Public Health
- Master of Social Work
- Doctor of Philosophy in Chemistry
- Doctor of Philosophy in Ecology
- Doctor of Philosophy in Education
- Doctor of Philosophy in Genetics

Nondegree programs leading to certificates in Business Administration (Imperial Valley Campus only), Applied Linguistics and English as a Second Language (ESL), Bilingual Education, Tourism and Hospitality Management, and Technical and Scientific Writing are also offered.

Types of Curricula Offered
San Diego State University offers the following types of curricula:
- Undergraduate Curricula. Undergraduate curricula provide the following opportunities for study:
  (1) Liberal arts and sciences: Curricula in the academic major fields, leading to the Bachelor of Arts degree in liberal arts and sciences.
  (2) Applied arts and sciences: Curricula in major fields leading to the Bachelor of Science, Bachelor of Arts or Bachelor of Music degree in applied arts and sciences.
  (3) Professional curricula: The College of Business Administration offers the Bachelor of Science degree in business administration with majors in seven fields: the College of...
Special Programs and Services

University Library

Librarians
Emeritus: Harrington, Hoover, Kenney, Kinsey, McAmis, Murdock, Neyndorff, Samples, Sandelin, Sanner, Schalles, Szabo
University Librarian: Bosseau
Assistant University Librarians: Leerhoff, Paison, Rapp
Coordinator for Collection Development: Dickinson
Librarian: Pease
Associate Librarians: Barclay, Chan, Coleman, Dintrone, Fikes, Pitt, Gwinup, Harkanyi, Martinez
Senior Assistant Librarians: Burns, Cardille, Crisley, Goodwin, Goyne, Grant, Greene, Harris, Johns, Moore, Posner, Rose, Shira, Sonntag, West, Wilson
Assistant Librarians: Lamb, Tumilow, Zyroff

The centrally located Malcolm A. Love Library, with its open stacks, adjoining study areas, and many individual carrels, has been designed to facilitate study, research, and reading. It has some thirty thousand reader stations and will ultimately accommodate over a million volumes. The collection comprises 816,600 volumes including books and bound periodicals, and 404,254 government documents. Additional resources include 2.0 million microfiche and microopaque cards, 48,478 reels of microfilm, 4,175 college catalogs, 30,750 scientific reports, 132,000 maps, 4,746 phonograph records, 53,000 curriculum items and 1,500 linear feet of archival papers. The library receives 9,350 periodical and serial titles, excluding government documents. It is a depository for United States and California government publications. It receives all United Nations and Organization of American States publications, as well as many publications of other national and international bodies.

Significant research collections in the social sciences and humanities include: Asian studies; business, public administration; American, Civil War, California, Latin American, Mexican history; Chicano resource materials; the literatures of the United States, Spanish America, Europe, Asia and Africa; music, with special strength in the Middle Ages and the nineteenth century; dramatic arts, including classical films; philosophy, especially medieval and American.

Research collections held in the sciences include: chemistry, biochemistry, ecology, biology, mathematics, physics, astronomy, anthropology, entomology, paleontology, geology, the geological history of the San Diego area, and support original research. Special collections, among them many rare editions, include: science fiction, H. L. Mencken, orchidology, the history of science with emphasis on astronomy and botany, German culture and civilization.

The library provides general reference service, separate reference service for sciences and engineering, government publications, and media and curriculum resources. Reference librarians assist students and faculty in their research and study, and librarians with advanced degrees in many subject areas are available for reference consultation. Computerized information retrieval service is also available.

Among conveniences provided library patrons are a current periodicals reading room and microforms and newspaper center; photocopiers and newspapers, including several for microfiche and microfilm; ditto machine; coin-operated electronic calculators; listening equipment for cassettes, discs and open-reel tape; and a special facility for the visually handicapped.

University Computer Center

The University Computer Center provides equipment, software, and technical personnel to support the instructional, research and administrative computing activities of the University.

The principal computer on campus is a Control Data Corporation CYBER 170-750 which runs on the NOS operating system in batch, transactional, and timesharing modes. Language compilers provided include BASIC, FORTRAN, COBOL, PASCAL, APL, and PL/I. Also available
Learning Resource Center

The Learning Resource Center provides support to faculty and staff in acquisition and distribution of instructional media, in the identification and development of instructional materials, in the production of instructional materials, and in the use of instructional technology. The center consists of three units: Media Distribution, Media in the Classroom, and Media in the Classroom Center. The center provides leadership to the University in identifying new approaches in the use of instructional technology.

Media Distribution provides support in the selection and use of instructional media, in the acquisition and maintenance of audiovisual equipment, in the production of instructional materials, and in the use of instructional technology. The director provides leadership to the University in identifying new approaches in the use of instructional technology.

Media Distribution provides support in the selection and use of instructional materials, in the acquisition and maintenance of audiovisual equipment, and in the production of instructional materials. The center provides leadership to the University in identifying new approaches in the use of instructional technology.

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San Diego State University Press

The San Diego State University Press is controlled by an Editorial Committee of San Diego State University faculty scholars, appointed by the Vice President for Academic Affairs and the Academic Senate. Financial support for Press activities is provided primarily by sales of books and by ancillary services to the University community. Financial accounting and coordination is provided by the San Diego State University Foundation.

San Diego State University Foundation

The San Diego State University Foundation was incorporated in 1943 as an auxiliary organization authorized by the Education Code of the State of California. It is a nonprofit corporation, self-financed, and was chartered specifically to provide and augment essential educational services. It is a nonprofit corporation, self-financed, and was chartered specifically to provide and augment essential educational services. It is a nonprofit corporation, self-financed, and was chartered specifically to provide and augment essential educational services.

Alumni & Associates

Membership in the Alumni & Associates is open to those persons who have an abiding interest in and commitment to the growth and future of SDSU and the community it serves. Membership in the Alumni & Associates is open to those persons who have an abiding interest in and commitment to the growth and future of SDSU and the community it serves. Membership in the Alumni & Associates is open to those persons who have an abiding interest in and commitment to the growth and future of SDSU and the community it serves.
Financial Aid

San Diego State University makes every effort to advise students of all available financial aid programs. Financial aid is available in the form of loans, grants, and part-time employment for eligible students. Since funds are limited and there are program deadlines, not all eligible applicants are awarded aid.

Information about all state, federal, and institutional aid programs is available from the Financial Aid Office, CL-122, (619) 265-8323. A financial aid brochure which describes the programs available and the eligibility requirements is available from the Financial Aid Office.

Applying for Aid

To be considered for first priority funding for the 1984-85 academic year aid applicants must file a Student Aid Application for California (SAAC) by March 1, 1984 and submit all required supporting documents to the Financial Aid Office by April 15, 1984. SAACs may be obtained from high schools and any college financial aid office in California.

A separate application form is required for the Guaranteed Student Loan which is a student loan made available from a participating lender.

Cost of Living

In order to ensure equity, San Diego State University establishes standard student budgets in coordination with The California State University system. Student budgets, updated annually for inflation are currently:

<table>
<thead>
<tr>
<th>Living off Campus</th>
<th>Living on Campus</th>
<th>Commuting from Home</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration fee for materials, service, student activity, student union, facilities</td>
<td>$ 700</td>
<td>$ 700</td>
</tr>
<tr>
<td>Books and supplies</td>
<td>336</td>
<td>336</td>
</tr>
<tr>
<td>Room and board</td>
<td>3960</td>
<td>2835</td>
</tr>
<tr>
<td>Transportation</td>
<td>630</td>
<td>558</td>
</tr>
<tr>
<td>Personal</td>
<td>1100</td>
<td>558</td>
</tr>
<tr>
<td>Total</td>
<td>$6726</td>
<td>$4826</td>
</tr>
</tbody>
</table>

In addition to the registration fee, foreign students and out-of-state students pay tuition of $108.00 per unit. All fees and costs are subject to change without notice.

California Grants, California State Fellowships, and Bilingual Grants

California residents may apply for grants administered by the California Student Aid Commission, 1410 F Street, Sacramento, California 95814. Applications are available in the Financial Aid Office during the annual application period (December to early February).

Scholarships and Fellowships Administered by Departments

Students receive scholarships, fellowships, grants, or stipends through the various departments. Federal, state, and private industry support programs of this nature are largely directed towards students who have decided to pursue some special field of work: the department of their major to determine what scholarship, fellowship, grant, or stipend support might be available to them.

Fellowships for Graduate School

As a general rule, students planning graduate work should inquire about graduate fellowship support from the graduate school to which they are applying. The San Diego State University Scholarship Office receives the annual announcements on most national awards including Fulbright, Ford, Rotary, Rhodes, and Marshall scholarships. Students interested in fellowships of this type are encouraged to discuss their applications with members of the San Diego State University faculty who have themselves in the past received these fellowships.

Scores from the Graduate Record Examination, Law School Admission Test, Admission Test for Graduate Schools of Business, Dental Admissions Test, or Medical Colleges Admission Test, as appropriate, are required in applying for most fellowships; therefore students should take the appropriate test early in the fall of their senior year. Information concerning these tests may be obtained from the San Diego State University Test Office, Fifth Floor, Love Library.

San Diego State University Scholarships

Scholarship Philosophy and Eligibility Requirements

The University Scholarship Committee has adopted the philosophy that scholarships at San Diego State University should reward academic excellence and attract and retain excellent students. They are not generally based on financial need. In keeping with this philosophy, the Committee established that, unless there were unusual and compelling circumstances, the eligibility requirements to apply for a scholarship are as follows:

Academic Qualifications

UNDERGRADUATES must have a 3.5 overall GPA or a 3.7 GPA in the last 30 units of university work.

GRADUATES must have a 3.5 overall graduate GPA, or in the absence of completed graduate units, a 3.5 overall undergraduate GPA or a 3.7 GPA in the last 30 units of university work.

HIGH SCHOOL SENIORS must have a 3.5 cumulative GPA (excluding physical education and military science) for all work completed in the first seven semesters.

Students must be enrolled full time (12 units–undergraduate, 6 units–graduate) at SDSU to be eligible to receive the scholarship check in fall 1984.

The Scholarship Application Process

Applications for San Diego State University Scholarships are available each year during one application period (fall semester) and may be requested from the SDSU Scholarship Office during that time. Scholarships are awarded in the spring for the following academic year.

Students should submit only one application for the SDSU scholarship program. The information will automatically be considered for any monies for which the student is qualified.

The University Scholarship Committee Awards Program

Each departmental scholarship committee ranks up to five scholarship applicants for the University Scholarship Awards. Final selection is made by the University Committee and is based on the academic excellence and the quality of the top-ranked students. Students must be enrolled at SDSU to be eligible to receive the scholarship check in fall 1984. The number of awards depends on funds available. For the 1983-84 academic year there were 150 awards of $500 each. Ten first-time freshman scholarships are also awarded and are renewable for up to five years of undergraduate study. Recipients of the Freshman Scholar Awards must continue to maintain the 3.5 GPA.

Department, School and College Scholarships

Certain scholarships have been donated to the University and are restricted to students in specific departments. Each departmental scholarship committee is asked to nominate a recipient and an alternate for each award from the applications of students in their department. The final approval of these nominations rests with the University Scholarship Committee. The following scholarships were awarded for the 1983-84 academic year (or have been designated for following years):

2-78398
General Scholarships

In addition to the University Scholarship Committee Awards and the College, Department and School Scholarships, there are a number of general scholarships, recipients for some chosen by the University Scholarship Committee, for others, chosen by the donors on the basis of nominees sent to them by the University Scholarship Committee. It is anticipated that the following scholarships will be awarded for the 1983-84 academic year:

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<tr>
<th>Scholarship Fund</th>
<th>Department</th>
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<tr>
<td>Ambassadors</td>
<td>American Society of Military Comptrollers, San Diego Chapter</td>
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<tr>
<td>Anonymous B</td>
<td>Arizona State University, Biomedical Sciences</td>
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<tr>
<td>Anonymous H</td>
<td>Arizona State University, Biomedical Sciences</td>
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<tr>
<td>Aztec Shops</td>
<td>Arizona State University, Biomedical Sciences</td>
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<tr>
<td>Mary Earnest Bean Memorial</td>
<td>Arizona State University, Biomedical Sciences</td>
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<tr>
<td>Brenda Beitner Memorial</td>
<td>Arizona State University, Biomedical Sciences</td>
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<tr>
<td>Claire Escudero Fund</td>
<td>Arizona State University, Biomedical Sciences</td>
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<td>Fleet Foundation</td>
<td>Arizona State University, Biomedical Sciences</td>
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<tr>
<td>Amelia Fontaine Memorial</td>
<td>Arizona State University, Biomedical Sciences</td>
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<tr>
<td>Johanna Muench Fox Memorial</td>
<td>Arizona State University, Biomedical Sciences</td>
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<tr>
<td>William Fox Memorial</td>
<td>Arizona State University, Biomedical Sciences</td>
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<tr>
<td>General Dynamics</td>
<td>Arizona State University, Biomedical Sciences</td>
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<tr>
<td>Arthur C. Harris</td>
<td>Arizona State University, Biomedical Sciences</td>
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<tr>
<td>David K. Hostetler</td>
<td>Arizona State University, Biomedical Sciences</td>
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<tr>
<td>Raymond and Margaret Houck Memorial</td>
<td>Arizona State University, Biomedical Sciences</td>
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<tr>
<td>Lee Hubbard</td>
<td>Arizona State University, Biomedical Sciences</td>
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<tr>
<td>Hughes Aircraft-GO Club</td>
<td>Arizona State University, Biomedical Sciences</td>
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</table>

**Financial Aid**
Student Services

Imperial Valley Campus Scholarships

The Imperial Valley Campus awarded $1,300 in scholarships for the 1983-84 academic year. Scholarships have been established by Imperial Valley Campus Chapter, SDSU Alumni & Associates; Soroptimists International, Calexico, and Imperial Valley Campus faculty contributions. Information and applications for these scholarships are available from the Financial Aid Counselor on the campus.

Student Outreach Services

The Student Outreach Services office includes School and College Relations, the recruitment component of the Educational Opportunities Program, and Core Student Affirmative Action, which provides recruitment (HEMAP) and retention services for non-EOP students from underrepresented ethnic groups. Through these programs, information and guidance are provided to prospective students about college selection and preparation, including admission requirements and procedures, academic programs, general education requirements, financial aid, student services and other aspects of university life.

Student Outreach Services advisers visit high schools and community colleges, meeting with counselors, students and parents. The staff assists SDSU colleges and departments with their provision of information to prospective students and distributes newsletters and other materials to counselors. Requests for these services and programs for prospective students are welcomed.

The Ambassadors

The San Diego State University Ambassadors is a campus organization devoted to providing excellent volunteer services. These specially selected and trained University students specialize in campus tours and assisting in campus and community service events. Call the Ambassadors at 265-8868 for a campus tour designed specifically for you.

Counseling Services and Placement

Counseling Services and Placement provides, without charge, the following services: (1) life planning and decision-making workshops; (2) educational and vocational assistance through counseling on career choice and curriculum selection; (3) counseling for personal, psychological, and social development; (4) consultation with student groups, faculty, staff, and administration; and (5) placement services. Additional programs and work experiences are provided through student employment, summer and part-time employment, job referrals, campus recruiting program, skill development, resume writing, interviewing workshops, and job search strategy. An extensive career library is available.

For a nominal fee, alumni may receive placement assistance through job mailings, maintaining an updated individual placement file, utilizing current resources in the library, and participating in workshops.

Services are available on a walk-in basis or by appointment, from 8:00-4:30 p.m., Monday through Friday. Services after 4:30 p.m. are available by special appointment only.

Health Services

Student Health Services provides a full range of medical care to SDSU students. The staff of over 75 personnel includes physicians board certified in family practice, gynecology, emergency medicine, dermatology, internal medicine, orthopedics, psychiatry, and radiology. Primary care nurse practitioners along with nursing, X-ray, laboratory and physical therapy staff also provide services. A pharmacy located in the Student Health Center dispenses at reduced cost most of the medications prescribed by Health Services staff.

Student Health Services is open twelve months a year. During the fall and spring semesters, the Center is open from 8:00 a.m. until 5:00 p.m., Monday through Friday. During intersession and summers, the Center closes at 4:15 p.m.

Services are available to all regularly registered students. Individuals may use Student Health Services on a walk-in basis. Those without acute or urgent problems are encouraged to call to make an appointment.

There is no charge at the time of services for almost all medical care provided at Student Health Services. Fees have been prepaid through regular registration fees. Some services require a minimal additional fee such as pharmacy, special lab work, physical therapy treatments, and so forth. Charges associated with these services are usually dramatically lower than those found elsewhere.
Many special programs are available, such as special clinics in family planning, weight control nutrition, health education topics, sexuality workshops and cold prevention.

An Audiology Clinic operated by the faculty and students of the Department of Communicative Disorders provides diagnostic information regarding hearing loss, hearing aid earmold, swim plug, and suppressor plug fabrication, and referral and counseling services for those individuals with confirmed or suspected hearing difficulty. A minimal fee is charged for diagnostic and earmold fabrication services.

A health history is required from all students prior to admission, and remains in the student's medical chart. In addition to the health history, students must show proof of having had a tuberculin test at some time during the preceding year. This procedure may also be completed without charge at Health Services. A physical examination is recommended for all entering students but is not required. Medical records are completely confidential and used only by and for Health Services.

Student participation is encouraged through membership on the Student Health Advisory Board, sponsored by Associated Students. Board members are involved in numerous health education projects and their advice is sought on program evaluation.

**Accidents and Student Insurance Coverage**

Under the Trustee policy, first aid or emergency medical care is provided to students, faculty, staff, and campus guests for accidents and injuries occurring on or near University property.

The SDSU Tuberculosis (TB) Test may be obtained during registration or, if inconvenient, at a later date at Student Health Services. During the regular school year this service is available Monday, Tuesday, Wednesday, Thursday, and Friday. Clinic hours may vary. Of course, you may obtain the test from your family doctor, Public Health Department, or other sources if you wish.

**Academic Skills Center**

The Academic Skills Center offers assistance to all students at any university level, including intensive mini-courses in a variety of learning-related topics. The center offers availability on an enrollment basis only.

**Test Office**

The Test Office serves both students and faculty through administering a wide variety of tests, including placement tests, competency tests for graduation, admissions tests for graduate programs, and inventories for counseling and career planning. A library of 1000 different tests is maintained for use by faculty and students in testing classes, and test scoring and analysis services are provided for classroom tests.

**International Students**

The International Students Office provides services to help international students gain the greatest possible benefit from their studies in this country and to help promote friendship, understanding and cultural exchanges, both with American students and the community. The Office informs the students of procedures of the U.S. educational system and helps with various problems that may be encountered. The staff acts as the liaison with government (especially immigration) and San Diego State University administration, departments, faculty, and community.

**Ombudsman**

The Ombudsman is an independent and impartial agent who helps individuals and groups seeking the resolution and correction of complaints. The Ombudsman acts as a liaison between the institution and those who have complaints. The Ombudsman is available to students, faculty, staff, and the community. The office is located in the Aztec Center, room 168, telephone (619) 265-6578.

**Audiology Diagnostic Center**

The Audiology Diagnostic Center is a service of the Department of Communicative Disorders. The center provides diagnostic information regarding hearing loss, hearing aid evaluations, and referrals for students, faculty, and staff. A minimal fee is charged for services. Call (619) 265-6477 for information.

**Speech, Language and Hearing Clinics**

The Communications Clinic, staffed by students and supervised by the Department of Communicative Disorders, provides assessment and remediation services for SDSU students. The clinic provides diagnostic information regarding hearing loss, hearing aid evaluations, and referrals for students, faculty, and staff. A minimal fee is charged for services. Call (619) 265-6477 for information.

**Clinical Training Center**

The Clinical Training Center provides a supervised training and service facility. The center is available to students, faculty, and staff. The center provides diagnostic information regarding hearing loss, hearing aid evaluations, and referrals for students, faculty, and staff. A minimal fee is charged for services. Call (619) 265-6121 for information.
Student Resource and Information Center

The Student Resource and Information Center (SRIC) develops and supports special programs and learning opportunities to encourage personal growth of students and allow them to meet their academic, social, and governance responsibilities effectively.

Supervision of student organizations at the Center includes registration of campus organizations, clubs, program development, room reservations and scheduling of student activities, advising Associated Students Boards, and supervision of Campus Lab School Lawn Sellers area.

The Center develops campus publications and manages information delivery to prospective, new, and continuing students. Research conducted through the office serves as basis for new and improved publications and services for students.

Educational and experiential programs offered to students through the Center are new student orientation programs, the mentor program for ethnic students, leadership training for student leaders, and internships. The SRIC also coordinates programs for parents of new and continuing students through Parents Associates. A Visitor/Hospitality Center is operated by and located adjacent to the SRIC.

New Hampshire Exchange Program

Students eager to attend a university on the East Coast for a semester may take advantage of the exchange program established between San Diego State University and the University of New Hampshire. The program permits participants to pay normal fees at their home campus and provide their own travel and room and board expenses; however, those currently receiving financial aid may continue to be eligible for it. Credits earned at New Hampshire are transferrable to the home campus. To be eligible, the student must have completed at least 30 units GPA required is 2.5. Interested students must apply to the Student Resource and Information Center before March 1, 1984 for the fall 1984 semester and by October 8, 1984 for the spring 1985 semester.

New Student Programs

The Student Resource and Information Center offers a wide variety of programs designed to introduce new students, both first-time freshmen and transfer students, to San Diego State University and campus life. Academic and career advising, registration, and Deadlines for all courses are handled by the Center. They also have the opportunity to serve on the Campus Children's Center Board of Directors.

Student Government

The Associated Students of San Diego State University, which is the official organization for student government, is a nonprofit corporation and is designed to provide special student services, and activities which are funded by the student activities fee. The 1500 students of the student body are represented by three executive officers and one representative per ASB and the Student Government Association.

Aztec Center

San Diego State University was the first of the California State University campuses to build a permanent university center. Since its completion in September 1966, the Aztec Center has served as a central facility to various college and university unions across the nation, governed by the Aztec Center Board. The Center houses a multitude of conference rooms and lounges which are available at no charge for student use. Room reservations can be placed in the Aztec Center Office. The Aztec Center offers a variety of job opportunities to students of SDSU. If you are interested in becoming an A.S. employee, all job opportunities are posted in the Aztec Office.

Campus Children's Center

The Associated Students' Campus Children's Center, a parent participation program, is provided for child care of SDSU students' children six months through five years of age who are in good standing. First priority is given to families with the greatest financial need and to earliest applicants regardless of race, religion, creed or sex. Faculty/staff children are accepted as space permits.

Tuition for students is determined on a sliding fee scale based on family size and income. The program is staffed by professional and student employees, volunteers, parent participants, and Child Development students. Parents make a weekly contribution of time as teachers and help the child view themselves and the environment positively.

The hours of operation are 7:45 a.m. to 5:00 p.m. for the preschool center (children 2-5 months through 5 years) and 7:00 a.m. to 5:00 p.m. for the infant center (children 6-11 months). Kindergartners may attend the preschool between 10:00 a.m. and 2:00 p.m. in the previous semester.

Aztec Shops

Aztec Shops, Ltd., is a California nonprofit corporation which has existed since 1931 to serve San Diego State University. Its primary purpose is to provide bookstore and food services. Other services of the Shops include ticket sales, a post office, vending machines, copy centers, automatic tellers, popcorn, ice cream, and pizza sales. The Bookstore provides a variety of textbooks, some of which are available through the Imperial Valley Bookstore. The copy center, located adjacent to the SRIC, provides xerox copying, binding, and typewriter rental. Lecture Notes, a service available to students, provides weekly notes taken in class by students, and is designed to reflect the teacher's lecture, written notes, and the textbook.
confirmed after the student is admitted to the University when a contract is received, and the first payment is received as specified. A student may apply as early as a year in advance. Though consideration will be given to a student's request for an individual hall and roommate, a specific assignment cannot be guaranteed.

No reservation can be confirmed until the student is accepted for admission to San Diego State University. Receipt of a housing contract does not mean that the University is committed to admitting the student.

During the Summer Sessions, rooms are available on a receipt-of-check date priority. A refundable security deposit must accompany a request for reservation.

Off-Campus Housing

Listings of apartments, houses, rooms and students seeking roommates are available adjacent to the Housing and Residential Life Office. In addition, counseling for students signing leases, with landlord-tenant conflicts, etc., is available in the Housing and Residential Life Office.

Because off-campus housing is limited, students are advised to begin their housing search at least one month before the first day of classes. The Housing and Residential Life Office organizes programs to assist students in locating off-campus housing. Workshops are also organized to educate students in tenant rights and responsibilities. For additional information please write: Off-Campus Housing, Housing and Residential Life Office, San Diego State University, San Diego, CA 92182.

Greek Letter Organizations

There are ten national sororities at San Diego State University which provide housing accommodations for approximately 290 women. A formal rush program is held during the fall semester while informal rush continues throughout the entire year. For further information contact Panhellenic, c/o Housing and Residential Life Office, San Diego State University, San Diego, California 92182.

The 16 national fraternities invite students for membership at the beginning of each semester. Fraternities provide men opportunities to participate in a wide variety of social and recreational activities, to expand leadership abilities, to develop enduring friendships, to receive scholastic assistance, and to participate in community service organizations. Fraternities provide housing for about 300 men, although living in the chapter house is not a requirement for membership. Interested students may obtain further information by writing to the Interfraternity Council, c/o Housing and Residential Life Office, San Diego State University, San Diego, CA 92182.

Transportation and Parking

San Diego Transit has seven bus routes that service the University, connecting with all areas of the metropolitan area. These are routes 11, 13, 15, 36, 80, 105, and 115. Information concerning bus routes, fares and services can be obtained by calling San Diego Transit at 233-3004. Bus schedule racks are located on campus at the Aztec Center Information desk and the Student Resource and Information Center (CL-114).

On-campus parking is by permit only, and is very scarce during the fall and spring semesters. Where possible, car-pooling or use of alternative modes of transportation is recommended. For further information on parking, contact the Campanile Drive Information Booth or the Department of Public Safety, 265-5671.

Navy Officer Programs

The Nuclear Power Officer Collegiate Program is a financial assistance program which pays over $1,000 per month to qualifying students completing their final two years of undergraduate or last year of graduate work in engineering, mathematics, chemistry or physics. It can be worth as much as $27,000 in the last two years followed by a teaching position in the Navy's Nuclear Power School. Applications for the Nuclear Power Instructor Program (11051-C) can begin after the sophomore or during the junior or senior years. The Division of Naval Reactors will determine initial eligibility by screening the college transcripts of interested applicants.

The Navy Officer Information Team visits the campus several times during the school year. Interested students are encouraged to see them for further information. Additional information may also be received by sending transcripts or calling the Officer Programs Office, NRD, San Diego, NTC San Diego, California 92133; telephone: 293-6444.

Educational Opportunity Program

This program is designed to assist undergraduate students from educationally disadvantaged or low-income groups who wish to acquire a college education but have not been able to realize their potential because of economic, educational or cultural environments. In cooperation with various federal, state and local agencies, the program recruits and enrolls students in a variety of courses at San Diego State University. The Office provides scholastic and personal counseling during their undergraduate careers. Financial aid is disbursed through the Financial Aid Office to those students who prove financial need in accordance with federal and state guidelines. EOP attempts to ensure that each student shall have the opportunity to reach his or her fullest potential.

Veterans Services

The Veterans Affairs Office is located in Admissions and Records on the first floor of the Administration Building. The office assists veterans and eligible dependents in applying for V.A. educational benefits. Additionally, the office administers a tutoring program and assists veterans in finding V.A. Work Study positions. Students interested in applying for advance payment of the first GI Bill check should contact Veterans Affairs at least two months before the beginning of each school year. For more information, come in to the office or telephone 265-5613.

Disabled Student Services

Disabled Student Services provides the support services needed by students with physical disabilities for equal access to the educational process. Services include orientation for new students, priority registration for students with special needs, close-in parking, transportation on and off campus, and loan of special equipment. Accessibility information, maps and elevator keys are available. The office provides interpreters for the deaf, readers and notetakers, as well as in-classroom testing assistance. Information on attendant and accessible housing in the campus area is available. Staff at Disabled Student Services provide government benefits counseling and assistance for personal, academic and vocational problems. A specialist provides evaluation and support services to learning disabled students. Special programs are also available for students with disabilities.

GI Bill check should contact Veterans Affairs at least two months before the beginning of each school year. For more information, come in to the office or telephone 265-5613.

Disabled Student Services, Campus Lab School 110; 265-6473 Voice or TTY.
Academic Organization

Colleges
Arts and Letters
Business Administration
Education
Engineering
Human Services
Professional Studies
and Fine Arts
Sciences

Imperial Valley Campus
North County Center
College of Arts and Letters

Administration
Dean: Robert C. Detwiler
Associate Dean: Marilyn J. Boxer
Assistant Dean for Student Affairs: Edward R. Mendez

General Information
The College of Arts and Letters is at the very heart of liberal arts education at San Diego State University. Its programs in the humanities and social sciences are offered through 18 academic departments and several interdisciplinary programs, each of which is designed to help students understand their role in society and to develop aesthetic sensibilities. Arts and Letters courses are offered to explore the experiences of men and women in society, their cultural expressions and practices, their languages, and their philosophical concepts. The College's highly trained, professionally active faculty seek to give students an awareness about the development of present knowledge and how to generate new knowledge. Students are encouraged to develop keen observation skills, the capacity to think critically, and the ability to express their views intelligently and sensitively as leaders.

Liberal Arts Courses
The College of Arts and Letters sponsors General Studies courses 101 and 301 which are interdisciplinary courses. They fall into two main categories: (1) lecture series on topics of designed to give liberal arts students skills desirable for advancement in their major, but not normally offered by their departments. Students interested in enrolling in General Studies 101 and 301 should contact the faculty advisor of the department(s) offering the course or the College of Arts and Letters Assistant Dean for further details.

Curricula Offered
Refer to the Courses and Curricula section of this catalog for a complete listing of program requirements and courses offered by departments within the College of Arts and Letters.

Master's Degrees
American Studies (M.A.), Anthropology (M.A.), Asian Studies (M.A.), Economics (M.A.), English (M.A.), French (M.A.), Geography (M.A.), History (M.A.), Latin American Studies (M.A.), Linguistics (M.A.), Political Science (M.A.), Russian (M.A.), Sociology (M.A.), Spanish (M.A.),

Baccalaureate Degrees
Afro-American Studies (B.A.), American Studies (B.A.), Anthropology (B.A.), Asian Studies (B.A.), Economics (B.A.), English (B.A.), Environmental Studies (B.A.), French (B.A.), Geography (B.A.), History (B.A.), Humanities (B.A.), Latin American Studies (B.A.), Linguistics (B.A.), Political Science (B.A.), Religious Studies (B.A.), Sociology (B.A.), Spanish (B.A.), Women's Studies (B.A.),

Minors

Preprofessional Curricula
Prelegal

Certificate Programs
Applied Linguistics and English as a Second Language (ESL), Cartography, Children's Literature, Public History, Quantitative Analysis in the Social Sciences, Spanish Translation, Spanish Court Interpreting, Technical and Scientific Writing.

Research Centers
Asian Studies
Paochun Chu, Director
The Center for Asian Studies is an interdisciplinary organization in the College of Arts and Letters. It involves faculty from the campuswide, it performs such services as (1) securing and administering grants and other support for research and development in Asian studies; (2) coordinating and publicizing the activities of faculty engaged in Asian-centered studies; (3) developing and administering the Asian studies program and relevant curricula at the undergraduate and graduate levels; (4) responding to campus and community requests for information and services; (5) fostering campus and community interest in Asian studies. The Center's reading room and study facility, located in AH-3172, contains Asian periodicals, books, pamphlets, dictionaries, and maps.

Economics Research Center
Walter Vogt, Director
The Economics Research Center collects research materials, publishes occasional monographs, and encourages research of special interest to faculty and students in economics and related areas. The Center's printed data holdings are located in the Center for Public Economics and in the Social Science Research Laboratory and are currently utilized by the Economics Department, the Center for Research in Economic Development, the Institute of Labor Economics, and the local chapter of Omicron Delta Epsilon.

European Studies Center
Leon Rosenberg, Director
The European Studies Center coordinates and supports teaching and research related to the European area. It supervises the major and the minor in European studies for the A.B. degree. It sponsors the annual San Diego State University Summer Seminar and Travel Study Tours to Europe at various times in the year. It administers the European Studies Center Laboratory in AH-3172 which contains books, pamphlets, English and foreign language periodicals, and a slide collection on European art and geography. The laboratory room is open several hours each day for study and research by students and instructors in courses dealing with any aspect of European studies. The Center also assists in the development of the university library's holdings in the European area and has created a special collection of library materials on European integration and unification which is being steadily and systematically expanded.

Institute of Labor Economics
Adam Gifford, Director
The Institute of Labor Economics is a facility of the Department of Economics to encourage research by students and faculty in all phases of labor problems, collective bargaining, labor legislation and social security. The Institute is designed to complement the curricular and degree programs in the Department of Economics and to be of service to related disciplines. Publications are exchanged with 75 similar institutes at other universities. Research materials, both printed and machine readable, in the area of labor economics are maintained in the Social Science Research Laboratory, located on the lower level of the West Commons.
Latin American Studies
Thomas M. Davies, Jr., Director

The Center for Latin American Studies seeks to encourage teaching and research related to Latin America. It has primary responsibility for the administration of the Latin American undergraduate and graduate degree programs. The U.S. Office of Education has designated the Center as one of the nation's ten Latin American language and area centers. The Center is also designated one of eleven "National Resource Centers for Latin America" by the Department of Education. In conjunction with this award, the Center administers programs that focus on: (1) the provision of problem-oriented courses to Latin American studies through the creation of courses dealing with urbanization and modernization of the area; (2) development of innovative methods of instruction in Spanish and Portuguese; (3) provision of services for the general public through the sponsorship of conferences, workshops, lectures and films. The Center also assists in the development of the University's Latin American holdings and has created a special collection of Latin American materials which is available in the Center's reading room.

Public Economics
George Babliot, Director

The Center for Public Economics is a facility of the Department of Economics to encourage research by students and faculty in all phases of nonmarket economic decision making, including the provision for and financing of public goods at each level; (2) the economic factors involved in environmental changes, in particular, their bearing on urban and local economic complement the curricular and degree programs in the Department of Economics and to be of and publications in the area of public economics. Fiscal matters are coordinated through the available for faculty research projects on subjects in public economics. The Center funds a Center is located in HT-307.

Center for Regional History
Stephen A. Colston, Director

The Center for Regional History is an archives and museum that has as one of its objectives the acquisition, conservation, and processing of materials for researching the development of business, labor, cultural, religious and social service organizations, and includes oral history. The Center's archives contain personal papers and records of public, and pictorial materials. The museum houses artifacts excavated from the Real Presidio de San Diego site reports, and collateral documentation. While providing resources for the study of regional economic, environmental, political, social, urban, and journalism topics. The Center also serves the utilization of primary source materials in research, writing and teaching of local history. The Center is located in LL-362.

Center for Religious Studies
Irving Alan Sparks, Director

The Center for Religious Studies is a facility of the Department of Religious Studies which fosters research by students and faculty in all of the areas embraced within the scholarly study of religion. The Center seeks to complement the curricular offerings of the Department of Religious Studies through research projects and other special activities based on extramural sources of support.

Research in Economic Development
M. C. Madhavan, Director

The Center for Research in Economic Development (CRED) is part of the Economics Department's effort to assist and encourage teaching and research related to the problems and processes of economic development. CRED provides information and limited assistance to students and faculty. CRED's printed data holdings are located in the Social Science Research Laboratory, WC-101.

Social Science Research Laboratory
Paul J. Strand, Director

The Social Science Research Laboratory (SSRL) was founded in 1974 to facilitate faculty research and to support a diverse set of instructional programs throughout the behavioral and other sciences. Emphasizing public opinion polling and computer applications to social problems, SSRL offers a wide range of services to University faculty, staff, and students, as well as to the broader San Diego community. Services and operations are organized along the following lines:

- Research Services offers a complete range of public opinion polling and survey research services, including sample design and execution, polling fieldwork, coding and data reduction, and data archiving and retrieval.
- Instructional Services offers consultation in computer applications to social problems, including a full range of statistical analysis programs. The Section also provides a range of specialized workshops and demonstrations about computer uses and applications, data management, and analysis.
- Operations offers services in the access and retrieval of computerized and other forms of quantitative data. The Section provides access to a number of large data archives, including the California Poll conducted by the Field Institute, hundreds of local, national and foreign polls, and other kinds of social data through the Interuniversity Consortium for Political and Social Research (ICPSR). Certain portions of the most recent U.S. Census, and other sources.

CRED's printed data holdings are available in the Social Science Research Laboratory, WC-101.
College of Business Administration

Administration
Dean: Allan R. Bailey
Associate Dean, Academic Affairs: Thomas M. Warschauer
Associate Dean, Graduate Studies: William F. Barber
Associate Dean, External Relations: Harold K. Brown
Assistant Dean for Student Affairs: Anna R. Newton

General Information
The College of Business Administration began in 1921 as a Department of Commerce in the Division of Social Sciences. In 1951 this department became the Division of Business and proceeded to a School of Business Administration in 1961. In 1979 the name was changed to the College of Business Administration.

The programs in business administration provide high quality education and are designed to represent both general education and the theoretical and practical side of education for business. To this end, in 1959 the Division of Business Administration applied for and received accreditation for its undergraduate programs in business administration by the American Assembly of Collegiate Schools of Business (AASCB), and in 1963 the graduate programs of the School of Business Administration were accredited by AASCB. In addition, the School of Accountancy (within the College of Business Administration) received accreditation by AASCB in the first year (1982) that this special accreditation for schools of accounting was offered. Being one of only twenty-two programs so recognized that year, all undergraduate and graduate programs have enjoyed continuous accreditation since their points of first application. Furthermore, the College of Business Administration is one of only two colleges of business south of the Los Angeles metropolitan area to have had their undergraduate and graduate programs accredited by AASCB.

In addition to a commitment to maintain a high quality accredited program, the College has the following goals: (1) to create and maintain a highly motivated educational environment for both students and faculty; (2) to evaluate all College activities, including formal classroom and research, in terms of their contributions to effective learning; (3) recognizing the dynamic nature of business and the society it serves, to instill within students an awareness of the necessity to embark on life-long careers of learning; (4) to prepare students for entry level positions which provide advancement opportunities in their chosen careers; (5) to maintain an active and nondegree midcareer educational opportunities.

Curricula Offered
Refer to the Courses and Curricula section of this catalog for a complete listing of program requirements and courses offered by departments within the College of Business Administration.

Research Bureau
Business and Economic Research

The Bureau of Business and Economic Research is an organized research facility located in the College of Business Administration. The Bureau facilitates research activities of the faculty and student projects. The Bureau is a full service member of the National Association of University Research. The Bureau of Business and Economic Research and maintains a national survey research support for conducting research in the areas of economics and business. (2) facilitate research individuals and organizations for conducting specific research projects; (3) respond to campus and community requests for information and services; (4) publish the results of its investigations. Graduate students and faculty are encouraged to make use of Bureau facilities.

College of Education

Administration
Dean: Dennis Gooier
Associate Dean: John Charney
Assistant Dean: Jean Ramage

General Information
The mission of the College of Education is broad and multidimensional. The College is concerned primarily with preparing teachers, administrators, resource specialists, and support personnel for various educational settings; providing continuing professional educational opportunities for education personnel; continually assessing the quality and appropriateness of all education activities; contributing to the knowledge base of both educational theory and practice; providing appropriate public service/technical assistance to individuals and agencies; locally, regionally, nationally, and internationally; and contributing to the general intellectual climate of the University community. The College has had an ongoing commitment to programs serving culturally diverse communities and bilingual individuals.

The College of Education offers a Master of Arts in nine academic areas of education. The Master of Science degree is offered in two additional academic areas. The Joint Doctorate with Claremont Graduate School is currently in its fifth year of operation. This unique program features a multicultural education emphasis. Approved teaching credential programs are offered for the multiple subjects credential, the single subject credential, and the community college instructor credential, as well as a number of specialist and service credentials.

Curricula Offered
Refer to the Courses and Curricula section of this catalog for a complete listing of program requirements and courses offered by departments within the College of Education.

Research Centers

Counselor Education
Paul Bruce, Director

The Center for the Study of Counselor Education is a unit within the College of Education designed to provide support for activities such as (1) securing and administering grants and other support for research and development in counselor education, (2) encouraging cooperation with faculty members from other relevant disciplines such as anthropology, economics, psychology, social work, sociology, and the University Counseling Center, and (3) coordinating programs and rendering services designed to promote counselor education at San Diego State University. The Center is administered by the Department of Counseling Education; fiscal matters are coordinated through the San Diego State University Foundation.

Institute for Cultural Pluralism

The Institute for Cultural Pluralism (ICP) is an umbrella organization, housing projects funded by federal, state and private sources. The ICP currently includes the National Origin Desegregation/Lau Center, the Bilingual Education Service Center, and the Social Equity Technical Assistance Center. These centers focus on issues of social equity, conduct research on questions related to equity in schools, and provide technical assistance to districts throughout the southern California and parts of Arizona.

Center for Instructional Technology Research and Training
Allison Rossett, Director

The purpose of the Center is to (1) secure grants and contracts for research and development in instructional technology; (2) conduct workshops, seminars and conferences relating to applications of instructional technology to teaching, training and management; (3) respond to campus and community requests for information and assistance; (4) assist in conducting needs assessments, task analyses, instructional program design and evaluations of instructional products or programs; and (5) disseminate information reflecting model use of
Education

Instructional technologies. The Center uses instructional technology to address education and training problems in health, school, military, business and social service settings. The Center functions within the Department of Educational Technology and Librarianship of the College of Education at San Diego State University.

Center for Vocational Rehabilitation

Fred McFarlane, Director

The Center for Vocational Rehabilitation coordinates and supports training and research activities in the field of vocational rehabilitation. This Center operates within the College of Education and works directly with faculty interested in this area. The Center for Vocational Rehabilitation administers projects funded by local, state and federal agencies. The Center’s facilities are located in the Alvarado area in close proximity to the campus.

College of Engineering

Administration

Dean: George T. Craig
Associate Dean: Nihad Hussain
Assistant Dean for Student Affairs: Frank Stratton

General Information

At the undergraduate level, the College of Engineering prescribes certain patterns of its courses, combined with those of other academic divisions of the University, as a program of 135 semester units leading to the Bachelor of Science degree in the four specific major fields of engineering: aerospace engineering, civil engineering, electrical engineering, and mechanical engineering. At the graduate level, the College offers the Master of Science degree in these same fields.

The objective of the engineering program at San Diego State is to provide the intellectual and physical environment best calculated to encourage students to develop their capacities toward a successful career in the profession of engineering. Graduates of this program are able to assume personal responsibility for the development and application of engineering knowledge with wisdom and judgment for the benefit of mankind. They are qualified to take the Engineer-in-Training examination as a first step to professional registration, to enter industry at the junior engineer level, or to continue formal education at the graduate level. Because the engineer’s work is predominantly intellectual and varied, and not of a routine mental or physical character, this program places emphasis on the mastery of a strong core of subject matter in the physical sciences, mathematics, and the engineering sciences of broad applicability. Woven throughout the pattern is a continuing study of the sociohumanistic facets of our civilization, because the engineering graduates must expect to find their best expression as leaders, conscious of the social and economic implications of their decisions.

Although the profession of engineering presents in practice a variety of specialties, undergraduate students initially focus their attention on a pattern of course work emphasizing engineering fundamentals. Students then are able to utilize this knowledge of fundamentals in developing special knowledge in their areas of specific interest.

Curricula Offered

Refer to the Courses and Curricula section of this catalog for a complete listing of program requirements and courses offered by departments within the College of Engineering.
College of Human Services

Administration
Dean: Peter Dual
Associate Dean: Dolores A. Wozniak
Assistant Dean for Student Affairs: Barry Jones

General Information
The mission of the departments and schools of the College of Human Services is to educate professionals whose practice and research are directed to the goals of protecting, preserving, restoring, and promoting the health and social well-being of people. The College also has a strong commitment to programs serving minority communities and bilingual individuals. The College of Human Services consists of five academic schools and departments: the School of Social Work, the School of Nursing, the Graduate School of Public Health, the Department of Communicative Disorders, and the Department of Health Science. In addition, it administers the University Center on Aging and the Clinical Training Center. The College provides the preservice education of professionals who plan to work in these public service fields. Programs vary from two to six years in length. All have a strong practicum, clinical, or field work component supervised by qualified faculty or practicing professionals. The Bachelor of Arts, Bachelor of Science, Master of Arts, Master of Science, Master of Public Health, and Master of Social Work degrees are conferred. In addition, students may receive national accreditation, state credential or state licensure, and national or state professional certification depending upon the program and the legal requirements and obligations for practicing the profession. All programs also provide inservice training for professionals already in the field.

Human Services Courses
The College of Human Services sponsors General Studies courses 220, 302, and 502. The purpose of these courses is to provide an opportunity for interdisciplinary study for students entering human service professions. Refer to the Class Schedule for specific content.

Curricula Offered
Refer to the Courses and Curricula section of this catalog for a complete listing of program requirements and courses offered by departments within the College of Human Services.

Master's Degrees
Communicative Disorders (M.A.), Nursing (M.S.), Public Health (M.P.H.), Social Work (M.S.W.)

Bachelor's Degrees
Health Science (B.S.), Nursing (B.S.), Social Work (A.B.), Communicative Disorders (A.B.)

Minors
Communicative Disorders, Gerontology, Health Science, Social Work

Certificate Programs
Gerontology, Human Services, Paraprofessional, Preventive Medicine Residency

Research Center
University Center on Aging
E. Percil Stanford, Director
The University Center on Aging is a multidisciplinary organization located in the College of Human Services. The Center is active in such areas of aging as (1) supporting interdisciplinary educational and curriculum efforts; (2) undertaking research and evaluation activities; (3) providing technical assistance and agency consultation for the community; (4) coordinating workshops and seminars for faculty, students, and community members; and (5) providing opportunities for student involvement in the community. The Center has a commitment to include minority content in each area described.

The University Center on Aging works with a wide variety of disciplines to provide students an opportunity to take gerontology related courses across a number of colleges, schools, and departments. Courses pertaining to aging are being offered within Psychology, Social Work, Health Science, Sociology, Family Studies and Consumer Sciences, Anthropology, Recreation, Nursing, and Biology. Students wishing to organize a series of courses to meet their needs in the area of gerontology are encouraged to contact the Center Director or staff for more specific information on course offerings.

The Center is responsible for the coordination of a certificate program in conjunction with the College of Extended Studies. This program is geared toward individuals who are likely to be currently working in gerontologically related professions. In addition, the Center administers an undergraduate minor in gerontology.

Other major activities of the Center are administering a National Institute on Minority Aging and a summer Elderhostel program. The Center serves as a central point for the development and dissemination of minority aging data nationally.
College of Professional Studies and Fine Arts

Administration

Dean: Merrill Lessley (Acting)
Associate Dean: W. Edward Morton
Assistant Dean for Academic Affairs: Susan Helweg
Assistant Dean for Student Affairs: Carol Robasciotti
Assistant Dean for Physical Resources: Fred Hammond
Director, Development and Public Affairs: Michael Lewis

General Information

Comprised of 14 departments and schools, the College of Professional Studies and Fine Arts is a multifaceted college which offers students diverse educational opportunities coupled with interdisciplinary programs in many areas of study. The college's academic programs not only encourage intellectual development but also help prepare students for professional careers in a wide spectrum of cultural, educational, social, economic, and technical fields.

Bachelor's degrees and master's degrees in most disciplines, are awarded in art, drama, family studies and consumer sciences, industrial studies, journalism, music, physical education, and film.

Curricula Offered

Refer to the Courses and Curricula section of this catalog for a complete listing of program requirements and courses offered by departments within the College of Professional Studies and Fine Arts.

Master's Degrees

Art (M.A., M.F.A.), City Planning (M.C.P.), Drama (M.A., M.F.A.), Home Economics (M.A.), Industrial Arts (M.A.), Mass Communications (M.S.), Music (M.A., M.M.), Nutritional Education (M.A.), Physical Education (M.A.), Radio and Television (M.A.), Speech Communication (M.A.),

Bachelor's Degrees

Art (A.B.), Child Development (B.S.), Criminal Justice Administration (B.S.), Dance (A.B.), Drama (A.B.), Foods and Nutrition (B.S.), Home Economics (A.B.), Industrial Arts (A.B.), Journalism (A.B.), Music (A.B., B.M.), Physical Education (A.B.), Public Administration (A.B.), Radio-Television (A.B., B.S.), Recreation Administration (A.B.), Speech Communication (A.B.),

Research Centers

Center for Communications

John P. Witherspoon, Director

The Center for Communications was established to develop and administer interdisciplinary research and planning projects concerned with telecommunications technology, issues, and applications. It also develops and administers the applications of the University's ITFS television system and teleconferencing facilities. Center projects are funded from grants and contracts with industry, government, education, and philanthropy. The Center seeks to stimulate recommendations for research from faculty members in participating departments, to conduct studies and planning projects relating to developments in the communications field, and to establish a mechanism for cooperative enterprises in the communications field with other institutions in the San Diego area.

Institute for Leisure Behavior

Mary R. Duncan, Director

The Institute for Leisure Behavior is the research and community service unit within the Department of Recreation at San Diego State University. It is primarily concerned with conducting leisure related research, promoting professional development, disseminating specialized publications, and organizing conferences, seminars, lectures, and workshops. The Institute also assists with the development of Camp Aerie, an aquatic program for disabled people, and administers facilities and programs for the Spring Valley Park and Recreation District and the City of Santee.

Institute of Public and Urban Affairs

Glen W. Sparrow, Director

The Institute of Public and Urban Affairs is located in the School of Public Administration and Urban Studies. The Institute was established to conduct research in community and governmental affairs and to sponsor conferences, colloquia, and symposia related to issues in public administration and affairs including urban planning, management, and criminal justice administration. The Institute also publishes occasional working papers and research monographs. The Institute is the Public Administration Center which contains a specialized and growing collection of research materials emphasizing issues in public affairs particular to San Diego and California.

Minors


Military Curricula

Aerospace Studies, Military Science, Naval Science
College of Sciences

Administration
Dean: Donald Short
Associate Dean: James Neel
Associate Dean: John D. Schopp
Associate Dean: Gordon Shafikoff
Assistant Dean for Student Affairs: Celia Marshak

General Information

The College of Sciences, comprised of eleven departments and various subprograms, offers bachelor's, master's and doctoral degrees and curricula for preprofessional students in medicine, veterinary medicine and dentistry. The science curriculum is enhanced by research centers which provide field experience as well as special seminars with guest speakers. The off-campus sites include the Mt. Laguna Observatory, about 5,000 acres in three separate biological sciences research stations, and a marine research laboratory managed jointly with Hubbs Research Institute. The majority of tenured Sciences faculty have active research programs which offer student involvement.

Curricula Offered

Refer to the Courses and Curricula section of this catalog for a complete listing of program requirements and courses offered by departments within the College of Sciences.

Joint Doctoral Degrees
Chemistry, Ecology, Genetics

* No students will be admitted into this program during the current academic year.

Master's Degrees
Applied Mathematics (M.S.), Astronomy (M.S.), Biology (M.A., M.S.), Chemistry (M.A., M.S.), Computer Science (M.S.), Geological Sciences (M.S.), Mathematics (M.A.), Microbiology (M.S.), Physics (M.A., M.S.), Psychology (M.A., M.S.), Radiological Health Physics (M.S.), Statistics (M.S.).

Bachelor's Degrees
Astronomy (A.B.), Biology (A.B., B.S.), Botany (A.B., B.S.), Chemical Physics (B.S.), Chemistry (A.B., B.S.), Computer Science (B.S.), Environmental Health (B.S.), Geological Sciences (B.S.), Mathematics (A.B., B.S.), Microbiology (A.B., B.S.), Physical Science (A.B.), Psychology (A.B.), Zoology (A.B., B.S.).

Minors
Astronomy, Biology, Botany, Chemistry, Computer Science, Geological Sciences, History of Science and Technology, Mathematics, Oceanography, Physics, Psychology, Zoology.

Certificate Programs
Recombinant DNA Technology

Other Curricula
Medical Technology, Pre-dental, Premedical, Pre-veterinary

Research Centers

The Edwin C. Allison Center for the Study of Paleontological and Geological Sciences
Richard H. Miller, Director

The Allison Center supports research in paleontology, geology and related sciences. The Center maintains a research library containing journals, reprints, and some textbooks, and houses a collection of fossil and recent vertebrates, invertebrates, and plants. Research space is available for students, faculty, and visiting scholars. Small grants and other funds and equipment are available to students and faculty for research projects. The Center also publishes reports of various types containing geological information related to the southern California and northern Baja regions.

Biological Field Stations

Walter C. Oechel, Director

SDSU operates three field sites to facilitate research and teaching in the chaparral and related ecosystems of San Diego County. These field sites, administered by the College of Sciences, support interdisciplinary research and educational activities in ecology and other areas of biology, soils, hydrology, geology, physics, geography and anthropology.

The field sites are the Sky Oaks Biological Research Station, Chihuahua Valley north of Warner Springs, California, the Santa Margarita Ecological Reserve near Temecula, and the Fortuna Mountain Ecological Reserve north of Mission Gorge Road in San Diego.

The Sky Oaks Biological Research Station maintains laboratory and dormitory facilities, weather stations, and a research area of 1,500 acres. It is adjacent to the Anza Borrego State Park, Cleveland National Forest, BLM lands, and private land. The proximity of these lands provides many more research and teaching opportunities than would otherwise be available. This site offers a diversity of community types, including red shank-chamise chaparral, mixed chaparral, oak woodlands, riparian communities, and pines. Most of the chaparral is old, having been burned in the 1927 fire, but aged communities of 2 and 85 years also exist on the property. A variety of soils and rock types are present and rich groundwater resources and archaeological sites are on the property.

The Santa Margarita site provides riparian vegetation, oak woodlands, grasslands, coastal sage scrub, chamise chaparral and mixed chaparral. While pockets of older chaparral exist, much of the chaparral vegetation is young, having been burned in the 1969 fire. Abundant wildlife exists and the Santa Margarita River, a perennial stream, offers stream and riparian habitat for study. The area is undeveloped and relatively undisturbed.

Students and faculty wishing to conduct research at one of the biological field sites or to use these areas for instructional purposes should contact the campus Biological Field Stations office in HA-525. Reports describing the ecology and development of the Santa Margarita and Sky Oaks sites are available from the director.

Center for Energy Studies

Alan R. Svedler, Director

The San Diego State University Center for Energy Studies (CES) facilitates, promotes and supports research and academic programs relating to energy, with particular emphasis on energy matters of concern to the San Diego and local southwest region. The Center encourages interdisciplinary research and instructional programs in the broad areas of energy modeling, technology assessment of energy systems, local energy policy planning and data collection relating to energy usage in the San Diego area. Research in specific energy technologies is carried out by a faculty who are members of the Center. The Center works closely with local and state agencies, as well as with private industry, and provides special supporting services to those involved.

Center for Marine Studies

Richard F. Ford, Director

The primary functions of the Center for Marine Studies are to coordinate and represent the multidisciplinary Marine Studies Program offered by departments within the University, to aid in the development of instructional, research, and public services aspects of the program, and to advise and counsel students concerning marine studies. The Center is operated as a special unit of the College of Sciences, Supporting services sponsored by the Center include advising of the College of Sciences, and counseling students in research, preparation for graduate studies, assistance to faculty and students in research, preparation for graduate studies, assistance to faculty and students in research, preparation for graduate studies, assistance to faculty and students in research, and the University's Marine Studies Program at Carlsbad, California, a boat operations program, and the University's Encina Laboratory at Carlsbad, California, a research station and field station program. The Center is administered by a director, and an executive committee consisting of faculty members elected from participating departments, and an executive committee consisting of faculty members elected from participating departments.
departments in the College of Arts and Letters, the College of Business Administration, the College of Engineering, the College of Professional Studies and Fine Arts, and the College of Sciences. Additional information about the Marine Studies Program and student advising is available from the Center for Marine Studies office in PS-103.

Molecular Biology Institute
A. Stephen Dahms, Director

The Molecular Biology Institute was established to serve interested departments of the biological and physical sciences in the coordination, support and enhancement of research and instruction in the molecular biological sciences. Interests and activities of the Institute encompass all approaches which aim to explain biology at the molecular level. The Institute is constituted as the university unit authorized to administer the master's program in "Molecular Biology." Currently, full members of the Institute are drawn from the departments of Biology, Botany and Chemistry. Associate members are drawn from a variety of disciplines that are cognate with the molecular biological sciences.

Paleobiology Council
Richard D. Estes, Director

The Paleobiology Council is an interdisciplinary research and teaching group concerned with exploration of the fossil record. It is composed of faculty members from the departments of Anthropology, Geology, Natural Science and Zoology and professional paleontologists in other research and educational institutions in the greater San Diego area. Students interested in pursuing an interdisciplinary Special Major leading to an M.A. in Paleobiology may do so under the direction of the committee.

Survey Research
Oscar Kaplan, Director

The Center for Survey Research was established to encourage nonprofit research in the sample survey field. The Center is prepared to undertake surveys requested by government or nongovernment organizations, and to do field work on a local, state or national basis. Faculty members who wish to submit applications for off-campus support in survey research in the name of the Center may do so, upon approval of the project by the center's advisory committee. The Center is administered by a director.

Systems Ecology Research Group
Walter C. Oechel, Director

The Systems Ecology Research Group (SERC) is an interdisciplinary group established to conduct basic research and promote graduate education in ecology. Group expertise exists in ecology, demography, image processing, and computer modeling. At present, the major emphasis includes plant photosynthesis and carbon allocation, water relations, phenology, and nutrient cycling. Simulation models are used to integrate the results of ecosystem level projects. Funding agencies include the National Science Foundation; the U.S. Department of Agriculture, the U.S. Forest Service, and the U.S. by calling 265-6613.

Imperial Valley Campus, Calexico

Administration
Dean: David Ballesteros
Associate Dean for Academic Affairs: Armando Ariza, Jr.
Assistant Dean for Administrative Affairs: Dana W. Murphy
Assistant Dean for Student Affairs: Cynthia D. Flores
Director of Admissions and Records: Kathleen Russum
Director of Library Services: Louise Lovely
Business Manager: Emma Odegard

Faculty
Emeritus: Harmon, Rodney, Spencer
Professors: Baldwin, Smith, Wilson
Associate Professors: Ayala, Erzen, Franklin, Polich, Ryan, Varela-Ibarra
Assistant Professors: Dunn, Hill, Hoopes-Coram, King, Quintana
Lecturers: Akers, Anderson, Bailey, Bernardi, C., Bernardi, R., Bier, Bowen, Crane, Fields, Gonzalez, Gonzalez, Holbrook, Lauer, Lohr, Massey, Michelli, Miller, Mudd, Murray, Noriega, Orenstein, Paul, Poli, Ren, Russum, Shaver, Stampel, Stevens, Stevenson, Velasco, Villarino, Wilhelm, Williams

General Information
The Imperial Valley Campus is a two-year upper-division campus of San Diego State University serving the desert area of southeastern California. It is accredited as an integral division of SDSU and operates under the same academic calendar. Established in 1959 by an act of the State legislature, the campus is located on the Mexican border in Calexico in the Imperial Valley.

The Imperial Valley Campus offers only the last two years of undergraduate education as well as a fifth year credential program for teacher preparation and occasional M.A. programs, the campus accepts transfer students, from community colleges or other colleges, who have at least 56 units. As a small campus with a low student/faculty ratio, the Imperial Valley Campus offers students the advantages of small classes and individual contact with the faculty. Instructional television (ITFs) provides students in Calexico the opportunity to participate in some classes broadcast live from the main campus in San Diego. The Imperial Valley Campus schedules its classes to meet once a week in three-hour blocks so that students who work full time can earn 9-12 units a semester by attending classes once or twice a week. Classes are also offered on the weekends.

The location on the Mexican border provides the opportunity for involvement in a bicultural environment. There are many opportunities to participate in the cultural life of Mexico, just across the border a city of more than 600,000 people. There are also many opportunities on the U.S. side of the border to be involved in a bilingual/cross-cultural setting. There is an exchange program for students between the Imperial Valley Campus and the Universidad Autonoma de Baja California which allows students to take classes at either of the participating universities and receive credit at their home institution. Among the faculty are professors with Latin American emphases in history, geography, sociology, and Spanish.

Climate
The Imperial Valley is one of the richest agricultural centers in the country. It has a desert climate with mild winters and little rainfall. Because of this, the area has a great potential for the development of alternative energy sources. Geothermal energy is already being produced in the area and solar and wind energy are both potentially important sources for future development. The desert also offers the opportunity to study a fragile ecological environment. Highly significant archaeological discoveries have been made in the area and there is continuing archaeological fieldwork.

Curricula Offered

Degrees
Major in criminal justice administration with the B.S. degree in applied arts and sciences.
Major in English with the A.B. degree in liberal arts and sciences.
Major in history with the A.B. degree in liberal arts and sciences.
Major in liberal arts studies with the A.B. degree in liberal arts and sciences.
Major in psychology with the A.B. degree in liberal arts and sciences.
Major in social science with the A.B. degree in liberal arts and sciences.
Major in Spanish with the A.B. degree in liberal arts and sciences.
Minor in public administration.
Minor in small business management.

Occasionally the Imperial Valley Campus cooperates with academic units and the Graduate Division of the San Diego Campus in offering selected graduate programs leading to advanced degrees. Such programs, scheduled on a part-time basis for working professionals, have been offered for the Master of Arts degree in Education with a concentration in Multicultural Education and in Administration and Supervision; these have been provided through cooperative arrangements with the College of Education. A similar program, provided by the School of Social Work, offers a course of graduate study leading to the Master of Social Work degree.

Certificate Programs
Business Administration, Public Administration, Spanish Translation and Court Interpreting.

Teaching Credentials
Basic
Multiple subject
Multiple subject (bilingual emphasis)
Single subject
Specialist
Special Education — in conjunction with the College of Education
Bilingual/Cross-cultural — in conjunction with the College of Education
Administrative Services — in conjunction with the College of Education

For further information see the Bulletin of the Imperial Valley Campus.

Facilities
The campus is located on an eight-acre city block in the heart of Calexico's Civic Center, across from Rockwood Plaza. This was originally the site of Calexico's first high school, and some of the campus buildings, including Rodney Auditorium, are part of the original school structures. In 1980 the Legislature approved funding to construct a new classroom building and mini computer laboratory which was dedicated in February 1983. A modern language laboratory and library media center have also been added.

The library is expanding its collection from its current 28,000 volumes to approximately 50,000 volumes by the end of the decade. It subscribes to over 500 periodicals. Quick interlibrary loan services make the library resources of the entire CSU system available to Calexico faculty and students. The Media Center provides assistance to the faculty in the use of educational technology. It has a wide range of equipment for use in the classroom.

A student union, bookstore, administration, student services, faculty office and shop buildings make up the facilities on the campus.

Admission, Registration, and Commencement
To apply for admission to the Imperial Valley Campus, students must file a complete application and transcripts as outlined elsewhere in this catalog. Both completed application and transcripts should be sent to the Admissions Office, San Diego State University, Imperial Valley Campus, 720 Heber Avenue, Calexico, California 92231. Please telephone (619) 357-3721 for further information. Applications for admission to the campus are accepted through registration week for both the fall and spring semesters. Because of the size of the campus, the registration process is easily accomplished in a short period of time with little chance of classes closing.

The Imperial Valley Campus holds its own commencement exercises each spring, the day before commencement exercises on the San Diego campus.
North County Center

Administration
Associate Dean of University Programs: Robert J. Behm
Director of Operations: Lawrence A. Clinger
Assistant Dean for Student Affairs: Sandra R. Kuchler
Senior Assistant Librarian: Nancy C. Assaf

Graduation and academic requirements for degree programs offered at the Center are identical to main campus requirements.
Faculty teaching at the Center are regular full-time SDSU faculty and part-time faculty selected by departments on the basis of their academic preparation and teaching experience.

General Information
The San Diego State University North County Center has been established to assist individuals living in the northern San Diego, southern Orange and Riverside counties in meeting their academic objectives.
Establishment of the Center was approved by the state legislature and Governor in the summer of 1979. The first classes at the Center were offered in September 1979. Courses offered at the Center are at the upper division and graduate level. Lower division academic work will be provided by local community colleges.
The Center is located at 800 West Los Vallecitos Boulevard, San Marcos, California.

Curricula Offered
Major in American Studies with the A.B. degree in liberal arts and sciences.
Major in liberal studies, option 2, with the A.B. degree in applied arts and sciences.
Major in social science with the A.B. degree in liberal arts and sciences.
Major with the B.S. degree in business administration in the following fields: accounting and management.
Major in public administration with the A.B. degree in applied arts and sciences.
Master of Arts degree in education with concentrations in elementary curriculum and instruction, secondary curriculum and instruction, community college curriculum and instruction, educational technology, multicultural education, and reading education.
Master of Arts degree in education with a concentration in educational administration and/or administrative services credential.
Master of Social Work degree.
Certificate in Instructional Technology.

Admission and Registration
To attend classes at the North County Center, students must file a complete application and transcripts as outlined elsewhere in this catalog and be admitted to San Diego State University, County Center, or both.

Students may register for North County classes by using the mail registration procedures or by registering in person at the Center prior to the start of classes. See the current Class Schedule for registration dates.

Student Services
In addition to on-site registration and payment of fees, student services provided at the Center include academic advising, career counseling, veterans benefit information, financial aid information, testing, textbook purchase, library services, and student activities.

Fees
Fees for courses offered at the North County Center are the same as those charged on the main campus. For specific information, see the Schedule of Fees in this catalog.
Division of Undergraduate Studies

Objectives and Functions
The Division of Undergraduate Studies serves to provide coordination, evaluation, and stimulation to the undergraduate programs at San Diego State University. It has general responsibility for the undergraduate curriculum, and for academic standards and regulations that affect undergraduate students. The Division has a special concern and responsibility for academic programs of a University-wide character. It administers the University Honors Program and Honors Exchanges, CSU International Programs, the Servicemembers' Opportunity College, and the preprofessional program in law. In addition, it sponsors the Liberal Studies major.

On significant matters of University-wide concern, the Division of Undergraduate Studies submits proposals to the University Senate for consideration and action.

Above all, the Division of Undergraduate Studies exists to promote the quality, diversity, and richness of the undergraduate programs at San Diego State University. It does so through the active involvement of students and faculty in the programs of the Division.

Honors Program

University Honors Program
The University Honors Program provides opportunities for students with demonstrated academic ability to find the stimulation and challenge that will help them develop their potential. Honors sections of regular classes, as well as those specially designed for the program, are available; students should anticipate enrolling in one or two honors courses per year, drawing from the other offerings of the University. The program is open to students in career options, opportunity for independent projects, and participation in student exchanges with similar programs across the nation.

Students may apply by contacting the Division of Undergraduate Studies (AD-223) at entrance, or before completion of three semesters. Eligibility for entrance is determined by an advanced high school course in the subject matter. Later eligibility is determined by a superior GPA at entrance.

Departmental Honors Courses
Some departments regularly offer honors courses which are independent of the University Honors Program; for these eligibility is determined according to achievement in the particular subject matter. Students should check with the Department of Undergraduate Studies for the subject matter for honors courses (most are listed under the department's 300 number). Contact the department or instructor for information.

University Prelaw Adviser
Students interested in pursuing a legal career are counseled by the University Prelaw Adviser. Through this office, prelegal students receive information and advice concerning prelegal study with the department or instructor for information.

International Programs
The California State University (CSU) International Programs offers students the opportunity to continue their studies overseas for a full academic year while they remain enrolled at their home CSU campus. The International Programs' primary purposes are to enable students to gain a firsthand understanding of other areas of the world and to advance their academic discipline.

A wide variety of academic majors may be accommodated by the 25 foreign universities cooperating with the International Programs in 15 countries around the globe. The affiliated institutions are: the University of São Paulo (Brazil); the universities of the Province of Quebec (Canada); the University of Copenhagen (through Denmark's International Student Committee's Study Division); the University of Provence (France); the Universities of Hamburg, Heidelberg, and Tubingen (Germany); the Hebrew University of Jerusalem (Israel); the University of Florence (Italy); Waseda University (Japan); the Iberoamericana University (Mexico); Massey University and Lincoln University College (New Zealand); the Catholic University of Lima (Peru); National Chengchi University (Republic of China); the Universities of Granada and Madrid (Spain); the University of Upsala (Sweden); and the Universities of Bradford and Bristol (United Kingdom). Information on academic course offerings available at these locations may be found in the International Programs Bulletin which may be obtained from the Division of Undergraduate Studies.

Eligibility for application is limited to those students who will have upper division or graduate standing at a CSU campus by September 1985, who possess a cumulative grade point average of 2.75 for all college level work completed at the time of application (some programs require a 3.0 cumulative grade point average), and who will have completed required language requirements. Selection is competitive and is based on academic records of applicants and recommendations and the applicant's academic record. Final selection is made by the Office of International Programs in consultation with a statewide faculty selection committee.

The International Programs supports all tuition and administrative costs overseas for each of its participants to the same extent that such funds would be expended to support similar costs in California. Students assume responsibility for all personal costs, such as transportation, room and board, and living expenses, as well as for home campus fees. Because they remain enrolled at their home CSU campus while studying overseas, International Programs students earn full resident credit for all academic work completed while abroad and remain eligible to receive any form of financial aid (other than work-study) for which they can individually qualify.

Information and application materials may be obtained from the Division of Undergraduate Studies (AD-223) or by writing to The California State University International Programs, 400 Golden Shore, Suite 300, Long Beach, California 90802. Applications for the 1985-86 academic year overseas must be submitted by February 1, 1985.

International Student Exchanges
In addition to the international programs sponsored by CSU, San Diego State University has entered into special institutional arrangement with selected foreign universities that provide both undergraduate and graduate students the opportunity for study abroad. Currently San Diego State University has exchange agreements with universities in France, Indonesia, Japan, Mexico, and the People's Republic of China. Information about student exchange opportunities may be obtained from the Gradate Division Office.

International Study Courses
San Diego State University provides the opportunity for students enrolled in The California State University International Programs to receive credit for special study or for subjects taken at universities abroad. The numbers 200, 400, and 500 are used to designate lower division, upper division, and upper division also acceptable for graduate credit. Transcript designation will be I.S. 200, 400, 500.

200, 400, 500. Projects in Study Abroad (Subject to be designated by Overseas Resident Director, International Programs) (1-4) I, II.

Course work taken by students studying abroad under the auspices of the CSUPI may be repeated with different content.
Graduate Division
Graduate Division

Organization and Administration

All graduate work leading to advanced degrees is under the jurisdiction of the Graduate Division. Responsibility for all graduate curricula is delegated to the Graduate Council under the chairmanship of the Dean of the Graduate Division, who also serves as the administrative officer of the Graduate Division.

The Graduate Division admits all students to the University and to authorized graduate degree programs, subject to the approval of the appropriate University authority for the administration of all matters related to graduate degree curricula. Minimum requirements for which are specified in Section 40504 of the California Administrative Code.

Association Membership

San Diego State University is a member of the Western Association of Graduate Schools and the Council of Graduate Schools in the United States.

Degrees Offered

All master's degrees are conferred by the Trustees of the California State University upon recommendation of the faculty of San Diego State University. These degree programs are designed to provide instruction for graduate students in the liberal arts and sciences, in applied fields, and in the professions, including the teaching profession.

Doctoral degrees are awarded jointly by the Board of Regents of the University of California and the Board of Trustees of the California State University in the names of San Diego State University and the cooperating campus of the University of California, in Education, jointly by the Board of Trustees of the California State University and the Board of Fellows of the Claremont Graduate School.

The Doctor of Philosophy degree is offered jointly with the University of California, San Diego, and the University of California, Davis. The Doctor of Philosophy degree in Ecology is offered jointly with the University of California, Berkeley and the University of California, San Diego. The Doctor of Philosophy degree in Education is offered jointly with the Claremont Graduate School.

Master of Arts

The Master of Arts degree is offered in the following fields:

- American studies
- Anthropology
- Art
- Asian studies
- Biology
- Chemistry
- Communicative disorders
- Drama
- Economics
- Education
- English

* No students will be admitted into this program during the current academic year.

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Nondegree Postbaccalaureate Study

In addition to specific programs of graduate study, the Graduate Division offers to individuals holding a bachelor's degree the opportunity to pursue postbaccalaureate study for academic experiences provided by the seven colleges of the University. The postbaccalaureate student may seek to satisfy intellectual curiosity, upgrade professional skills, or perhaps prepare for a change in career.

Nondegree postbaccalaureate status does not preclude a student from later admission to a degree program. Often some of the course work completed as a postbaccalaureate student can be applied toward an advanced degree program and the regulations of the Graduate Division.

Further information about nondegree postbaccalaureate study may be obtained by contacting the Graduate Division Office.

Admission to Postbaccalaureate Study

Admission to San Diego State University for postbaccalaureate study is open to those who have not completed their four-year baccalaureate work. Potential applicants should refer to the Graduate Division Bulletin, available from the departmental offices as soon as graduate listings. Students are also advised to contact the departmental offices for personal or academic advice.

Application Procedures

All applicants for postbaccalaureate study (e.g., advanced degree applicants, those seeking credentials or certificates, and those interested in taking courses for personal or academic purposes, must first complete the admission process at San Diego State University. For additional information, contact the Graduate Division Office.

Graduate Division / 71

Master of Science

The Master of Science degree is offered in the following fields:

- Accountancy
- Aerospace engineering
- Applied mathematics
- Astronomy
- Biology
- Business administration
- Chemistry
- Civil engineering
- Computer science
- Counseling
- Electrical engineering
- Geological sciences
- Home economics
- Mass communications
- Mechanical engineering
- Microbiology
- Nursing
- Nutritional sciences
- Physics
- Psychology
- Radiological health physics
- Rehabilitation counseling
- Special major
- Statistics

Master of Business Administration

Master of City Planning

Master of Fine Arts in Art

Master of Fine Arts in Drama

Master of Music

Master of Public Administration

Master of Public Health

Master of Social Work
Second baccalaureate degree candidates should apply as undergraduate degree applicants. A complete application for postbaccalaureate study includes all of the materials required for graduate applicants plus the supplementary graduate admissions application. Postbaccalaureate applicants, including those who completed undergraduate degree requirements and were graduated from this University, are also required to complete and submit an application and the $35.00 nonrefundable application fee. Since applicants for postbaccalaureate programs may be limited to the choice of a single campus on each application, reapplication to alternative campuses or later changes of campus choice will be minimal. In the event that a postbaccalaureate applicant wishes to be assured of initial consideration by more than one campus, it will be necessary to submit separate applications (including fees) to each. Applications may be obtained from the Admissions and Records Office or the Graduate Division Office of any California State University campus.

General Admission Requirements

All applicants for any type of postbaccalaureate study at San Diego State University must:
(a) hold an acceptable baccalaureate degree from an institution accredited by a regional accrediting association or have completed equivalent academic preparation as determined by the Dean of the Graduate Division; (b) have attained a grade point average of at least 2.5 (when A equals 4) in the last 60 semester (90 quarter) units attempted; and (c) have been in good standing at the last institution attended. Applicants who do not qualify for admission under provisions (a) and (b) may be admitted by special action if the Dean of the Graduate Division determines that there is no other academic or professional evidence sufficient to merit such action.

Members of the faculty of San Diego State University holding appointments at or above the rank of instructor or lecturer may not be candidates for degrees at this University. Faculty may register for courses outside their own departments or schools.

Admission Categories

All applicants seeking admission to postbaccalaureate study at San Diego State University must apply and be accepted in one of the following categories:

Postbaccalaureate Standing (Unclassified)

A student wishing to enroll in courses at the University for personal or professional reasons, but not necessarily with an objective of an advanced degree or credential, may be considered under General Admission Requirements. Admission with postbaccalaureate standing (classified) does not constitute admission to, or assurance of consideration for, advanced degree curricula.

Postbaccalaureate Standing (Classified)

A student wishing to be admitted to a program leading to a credential only (not an advanced degree) must meet the criteria specified under General Admission Requirements. Only students in advanced credential programs must achieve a satisfactory score on the GRE General (Aptitude) Test. (Students holding an advanced degree from an institution that must also meet the professional, personal, scholastic and other standards prescribed by the University have developed a continuing program of faculty exchange with foreign universities. Since 1964, more than fifty exchanges of faculty members have been arranged with various arrangements to exchange professors periodically with the following institutions: the universities of Angers, Nice, Clermont Ferrand, and Aix-en-Provence in France; Wuhan and Hangzhou universities in the People's Republic of China; Middlesex Polytechnic and University of London, Birbeck College, England.

International Faculty Exchanges

In order to enhance the international character of instruction and research, San Diego State University has a continuing program of faculty exchange with foreign universities. Since 1964, more than fifty exchanges of faculty members have been arranged with various universities in Europe, Asia, and Latin America. Currently, San Diego State University has formal arrangements to exchange professors periodically with the following institutions: the universities of Angers, Nice, Clermont Ferrand, and Aix-en-Provence in France; Wuhan and Hangzhou universities in the People's Republic of China; Middlesex Polytechnic and University of London, Birbeck College, England.

Graduate Bulletin

Complete details on the operation and administration of these requirements, together with other information on graduate study, will be found in the Graduate Bulletin, which is available at the Bookstore.
Nondegree Curricula

Preprofessional Programs
Preprofessional Programs

Entrance into professional schools is becoming increasingly competitive; therefore, it is imperative that students begin planning their curriculum at the earliest possible time in conjunction with the appropriate academic adviser.

Preprofessional Health Advising Office

The preprofessional health advising office is responsible for advising premedical, preprofessional, and preadolescent students in their preparation and application to the professional schools of their choice. This office works in conjunction with the candidate’s major department to establish a degree program coordinated with the preprofessional requirements of the professional schools. It is the communication link between the student and the profession; keeping the student apprised of changes in the requirements and procedures for acceptance. The Advising Office is located in Life Science, Room 135.

Predental Curriculum

The predental program is pursued in conjunction with a degree program. Students ordinarily elect to concentrate in biology, chemistry, microbiology, or zoology, with a major in one area and predental students must conferring with a predental adviser prior to initial registration and at least once each semester regarding their progress, and to obtain approval for their program for the coming semester.

Regardless of the major, predental students should include the following courses in their program: Botany 110; Zoology 200; Biology 215, 502, 503, 572; Zoology 503; Chemistry 200, 201, 231, 431; Mathematics 121 and 122, or 156; Physics 180A-180B and 182A-182B, or 195, 1951, 196, 1961, 197, 197L; Psychology 101; plus one additional course in psychology, Zoology 250 (Topics in Dentistry) is offered each spring semester.

In addition to the courses listed, students should fulfill all requirements for their major and, if possible, take at least one advanced course recommended by their department and, if necessary, to obtain information regarding the entrance requirements of specific dental schools.

High school students planning to enter dentistry should include in their high school program: mathematics, foreign language, science, chemistry, physics, two years of French, German or Spanish, four years of English.

The Preprofessional Health Adviser will be available to high school or transfer students by appointment throughout the summer and during the registration period. All predental students should establish a personnel file in Life Science, Room 135; 265-6638.

Prelegal Curriculum

The prelegal program is pursued in conjunction with a degree program. There is no specific prelaw program leading to a bachelor’s degree. Students interested in the legal profession should consult with the University prelaw adviser regarding the entrance requirements of the schools of law for a broad and liberal education, while at the same time providing desirable indications for the prelegal student, either of which may be selected in consultation with the studies major pattern. Subject to individual variation, the fields of economics, history, and as being the most effective background for later professional study in law.

The following courses of study are recommended. Lower division: Accountancy 210A-210B or 212, Economics 101 and 102, Political Science 101 and 102, and a year course in history.

Upper division: In the junior and senior years students will plan their course with the counsel of their adviser in terms of the field of law in which they plan to work, but keeping in mind the entrance requirements and examinations for admission to schools of law. The following list should receive consideration by all prelegal students in the selection of courses, though it is to be thought of as flexible in accordance with student needs. Finance 340; Economics 338, 370; History 521A-521B, 534A-545B; Political Science 301A-301B, 346, 347A-347B; Additional: Economics 380, History 536 and 547A-547B, Political Science 343, 348 and 350.

In addition to the courses taken in the fields of concentration, upper division electives in English, philosophy, psychology, sociology, and speech communication are recommended. A mastery of English is essential.

Premedical Curriculum

The premedical program is pursued in conjunction with a degree program. Students ordinarily elect to concentrate in biology, chemistry, microbiology, or zoology, with a major in one area and selected courses work in the other. Other departmental majors are permissible, however. Premedical students must confer with a premedical adviser prior to initial registration and at least once each semester regarding their progress, and to obtain approval for their program for the coming semester.

Regardless of the major, premedical students should include the following courses in their program: Botany 200 and Zoology 200; Biology 215, 502, 503, 572, Zoology 503; Chemistry 200, 201, 215, 502, 503, 561A, 561B, 431; Mathematics 121 and 122, or 156; Physics 180A-180B and 182A-182B, or Mathematics 121 and 122, or 156; Physics 180A-180B and 182A-182B, or 195, 196, 1961, 197, 197L. Each student should consult the major for level of course required when there are alternatives.

In addition to the courses listed, students should fulfill all requirements for their major and, if possible, take at least one advanced course recommended by their department such as Microbiology 310; Psychology 101; Zoology 506, 508. The students are also expected to obtain information regarding the entrance requirements of specific medical schools.

High school students planning to enter medicine should include in their high school program the following subjects: elementary algebra, plane geometry, intermediate algebra, chemistry, physics, two or three years of French, German or Spanish, four years of English.

The Preprofessional Health Adviser will be available to high school or transfer students by appointment throughout the summer and during the registration period. All premedical students should establish a personnel file in Life Science, Room 135; 265-6638.

Preveterinary Curriculum

The preveterinary program is pursued in conjunction with a degree program. Students ordinarily elect to concentrate in biology, chemistry, microbiology, or zoology, with a major in one area and selected courses work in the other. Other departmental majors are permissible, however. Preveterinary students must confer with the preveterinary adviser prior to initial registration and at least once each semester regarding their progress, and to obtain approval for their program for the coming semester.

Regardless of the major, preveterinary students should include the following courses in their program: Biology 215, 502, 503, 572, Zoology 200; Chemistry 200, 201, 215, 502, 503, 561A, 561B, 431; Mathematics 121 and 122, or 156; Physics 180A-180B and 182A-182B, or 195, 196, 1961, 197, 197L. Each student should consult the major for level of course required when there are alternatives. Zoology 250 (Topics in Medicine) is offered each fall semester.

In addition to the courses listed, students should fulfill all requirements for their major and, if possible, take at least one advanced course recommended by their department such as: Microbiology 310; Psychology 101; Zoology 506, 508. The students are also expected to obtain information regarding the entrance requirements of specific medical schools.

High school students planning to enter medicine should include in their high school program the following subjects: elementary algebra, plane geometry, intermediate algebra, chemistry, physics, two or three years of French, German or Spanish, four years of English.

The Preprofessional Health Adviser will be available to high school or transfer students by appointment throughout the summer and during the registration period. All preveterinary students should establish a personnel file in Life Science, Room 135; 265-6638.
Preparation for Other Professions

Full programs of professional study in other fields, such as agriculture, forestry, architecture, optometry, pharmacy, and theology, are not available at San Diego State University. However, students who may wish to take some undergraduate work in liberal arts at this university can also begin coursework in preparation for such programs. Students are advised to consult the catalog of the university to which they expect to transfer to determine requirements before arranging the program. Further information may be obtained from the Assistant Dean of Students in the appropriate college at San Diego State University.
Continuing Education

Functions
The California State University regards its Extended Education credit-bearing programs as integral parts of the institution. These programs are viewed as extensions of the institution's educational services and are in concert with the institution's overall mission and purpose. The programs and courses in Extended Education are expected to meet the standards of quality which the institution sets for its other programs and courses, in terms of resources, faculty, level of instruction, evaluation and support services.

The College of Extended Studies serves as the principal University liaison with the adult community and provides a wide variety of traditional and nontraditional, credit and noncredit, quality educational experiences designed to fit the life-style and expectations of mature adults. In addition, it provides a range of academic and special programs for students and groups during the summer months, in the evenings, and between semesters. Under the direction of the Dean of the College, programs are developed and carried out within five divisions—Special Sessions and Extension, Professional Development, American Language Institute, Retired Adult Programs, and Administrative Services. The majority of the programs are operated on a self-support basis since state funds are not provided for Continuing Education activities.

Summer Programs
The College of Extended Studies administers a comprehensive summer program for San Diego State University. Approximately 600 courses, workshops, short courses, interdisciplinary and experimental offerings, and special programs are available for matriculated students from other institutions and special groups. Credit earned during the summer is not required for summer attendance.

Five sessions are scheduled each summer: two 3-week terms during which four units of credit may be earned; two 6-week terms in which students may earn seven units of credit; and offered from approximately the first of June through the middle of August, each year. A graduate student may earn credit in residence which may be used to satisfy the requirements for an advanced degree or for credentials. If a student plans to offer work taken in early application for admission to the University with classified graduate standing at the Office of Admissions and Records.

Students planning to attend the University during the fall semester must be cleared for admission through the Office of Admissions and Records. The Summer Sessions Bulletin, which includes the registration form and all necessary information about the summer sessions, is available for distribution in March.

Winter Session
The College of Extended Studies administers a special academic program during the winter recess period titled "The Winter Session." This special session provides students an opportunity to earn resident academic credit through participation in concentrated and interesting course requirements. Admission to the University is not required for Winter Session attendance.

American Language Institute (ALI)
The American Language Institute offers noncredit intensive (25 hours per week) English programs throughout the year to students and professionals interested in improving their English proficiency. By enrolling in ALI, students may take advantage of a program called acceptance to a university in order to obtain a passport, a U.S. visa, or government sponsorship. It is offered to students who do not have an adequate command of English or the required TOEFL (Test of English as a Foreign Language) score to qualify for admission to the University. After transcripts of their academic work have been evaluated by SDSU staff, students may receive an official letter of conditional admission which states that the student has met all University requirements except English language proficiency and may enter the University after appropriate TOEFL scores and training at the American Language Institute (ALI).

Programs offered by ALI are as follows:

English for Academic Purposes — A 16-week course for students planning to enter San Diego State or other colleges or universities. Classes are offered in reading, writing, grammar, and intercultural communication.

American Language Communications — A 10-15 week course focusing upon oral skills and cultural experiences. Classes include eight hours of conversations, addition to reading, writing, structure and pronunciation. Elective courses are offered and directed community activities provide experiences for real language use. Regular field trips to places of educational and recreational interest are an integral part of the program.

Specific Purposes Programs — Programs for students and professionals with specific needs; including language programs in management, teacher training, personnel administration and education, are arranged.

Summer Language Institutes — A number of special short-term language programs are offered by the ALI each summer (e.g., Management and Business English).

Services — All students at the institute are offered housing assistance, counseling for university entrance, health services and orientation to university life.

Information about and applications for the ALI can be obtained from the Director, American Language Institute.

Foreign Travel/Study Programs
Each summer the College offers a variety of travel/study programs which are designed to give students and community members an opportunity to travel abroad and earn extension credits. Programs range from two to five weeks in length, with a maximum of six units of credit. Programs offered include the Human Experience section of the General Education requirements. Programs are offered by ALI each summer (e.g., Management and Business English).

Courses in a variety of areas including education, business administration, public administration, and the arts and sciences. Many courses and workshops are offered throughout the year. These courses are listed in a special Extended Studies Program Bulletin published four times a year.

Extension Courses
Extension courses are offered each semester in a number of areas including education, business administration, public administration, and the arts and sciences. Many courses and workshops are offered throughout the year. These courses are listed in a special Extended Studies Program Bulletin published four times a year.

There is no limit on the total number of extension units for which a student may enroll; however, the maximum extension credit which may be used toward bachelor's degree is 20 units.
requirements at San Diego State University is 24 units. Extension work is considered the same as transfer credit and is therefore not included in the student’s San Diego State University scholastic average.

**Open University**

Most regular, on-campus classes are open to qualified extension students by special permission of the department and the instructor. Students who take advantage of “Open University,” are required to pay regular extension fees. They are permitted to enroll only after matriculated students have completed their registration. Consult the College of Extended Studies or the current Class Schedule for complete details on Open University qualifications.

Open University credit earned through one semester of Open University enrollment may be considered as residence credit for students who subsequently matriculate at the University in an advanced degree program.

Open University classes may not be taken by the following:

1. Nonmatriculated foreign students (nonresidents from non-English-speaking countries) with a score of less than 450 on the Test of English as a Foreign Language (TOEFL) or its equivalent.
2. Foreign students with I-20 visas from another university.
3. SDSU matriculated students.
4. Graduate students taking graduate classes (unless permission has been obtained from graduate adviser).

**External Degree Programs**

In addition to its role of administering external degree programs for the civilian population, Extended Studies serves as the liaison with the military installations in the University service area for the purpose of developing higher educational opportunities for military personnel. The Servicemembers’ Opportunity College, offers external degree and certificate programs designed specifically for mature military and civilian personnel, including a Master of Arts degree in Education with a Concentration in Educational Administration and Supervision.

Classes are held at times and locations convenient for students. The College also administers a Master of Business Administration which is offered only to students sponsored by participating companies.

For additional information contact the Extension Office.

**Professional Development**

A variety of learning activities are offered throughout the year to meet the continuing education needs of working adults. These opportunities take many forms, as described below.

For further information, contact the Director of Professional Development.

**Certificate Programs**

Professional certificate programs are coordinated by the Division of Professional Development. Educational services are provided for a wide variety of groups and professional organizations. Credit certificate programs are offered in the following areas: Applied Management, Materials Management, and Personnel and Industrial Relations.

The Division also offers Noncredit Certificate Programs in special interest areas.

**Seminars and Workshops**

The Division coordinates the activities of the Center for Continuing Education in Business and Engineering in cooperation with the College of Business Administration and the College of Engineering.

The Center offers intensive seminars and workshops for the business community aimed at increasing the expertise of these people.
External Degree Programs

Purpose
External degree programs have been established by the Board of Trustees of The California State University to increase educational opportunities for adults who characteristically have not had access to traditional academic programs, to aid them in expanding their job and career potential or in pursuing personal enrichment goals.

External degree programs are designed for mature adults who by reason of geography, employment, family responsibilities or other personal circumstances find it difficult to spend extensive periods of time "in residence" on a university campus, or who are employees of particular firms, agencies or institutions, or occupational groups for whom an external curriculum is appropriate.

Admission Requirements
Applicants must be at least 18 years of age and have attained a high school diploma or its equivalent. Students are normally expected to have completed their lower division coursework prior to entry into an external degree program. However, students with less than 56 units of college credit may be admitted to upper division courses for which they meet prerequisites.

Admission and Enrollment Procedures
Students who desire to become classified candidates for the degree must apply for admission to the degree program by completing the following steps prior to earning nine units of credit in that program:
1. Complete and submit Application for Admission.
2. Request transcripts from last high school and all colleges and universities attended; transcripts must be received directly from the school.
3. Submit a one-time admission fee of $35.00.

Students may enroll in courses without having been admitted to the program. Priority will be given to those persons who have applied for admission and been accepted into the degree program.

Instruction and Scheduling
The quality of instruction in external degree programs is maintained at the same high level as that in campus programs. While the length of the instructional term for external degree programs may vary from five to sixteen weeks, depending on the time constraints of the student population being served, the contact time per unit of credit is the same as required in campus credit.

Curriculum
The curriculum in an approved undergraduate external degree program is comprised of upper division courses only. Students who have not completed general education and elective requirements may do so at community colleges, through open university extension, summer sessions at San Diego State University or at other regionally accredited institutions.

Servicemembers' Opportunity Colleges
San Diego State University has been designated as an institutional member of Servicemembers' Opportunity Colleges (SOC), a group of over 400 colleges and universities providing voluntary postsecondary education to members of the military throughout the world. As a SOC member, SDSU recognizes the unique nature of the military lifestyle and has committed itself to easing the transfer of relevant course credits, providing flexible academic experiences, and crediting learning from appropriate military training and experiences. SOC has been developed jointly by educational representatives of each of the Armed Services, the Office of the Secretary of Defense, and a consortium of 13 leading national higher education associations. It is sponsored by the American Association of State Colleges and Universities (AASCU) and the American Association of Community and Junior Colleges (AACJC).

Fees
Since Extension and External Degree programs do not receive state support, they are required to be financially self-supporting. Contact Extension for fee ranges.

Degrees Offered
Graduate
Master of Arts in education.
Master of Business Administration
(For graduate external degree program details, refer to the Graduate Bulletin of the Graduate Division.)
Regulations

Admission and Registration
General Regulations
Admission and Registration

Admission Procedures and Policies
Requirements for admission to San Diego State University are in accordance with Title 5, Chapter 1, Subchapter 3, of the California Administrative Code. If you are not sure of these requirements, you should consult a high school or community college counselor or the Admissions Office. Applications may be obtained from the Admissions Office at any of the campuses of the California State University or at any California high school or community college.

Importance of Filing Complete, Accurate, and Authentic Application for Admission Documents
The CSU 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 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 academic credit, suspension, or expulsion (Section 41301, Article 1.1, Title 5, California Administrative Code).

Requirement and Use of Social Security Account Number
Applicants are required to include their social security account number in designated places on applications for admission pursuant to the authority contained in Title 5, California Administrative Code, Section 41201. The social security account number will be used as a means of identifying records pertaining to the student as well as identifying the student for purposes of financial aid eligibility and disbursement and the repayment of financial aid and other debts payable to the institution.

Undergraduate Application Procedures
Prospective students applying for part-time or full-time programs of study in day or evening classes, must file a complete application as described in the application booklet. The $35 nonrefundable application fee should be in the form of a check or money order payable to The California State University and may not be transferred or used to the applicant's account. The applicant need file only at their first choice campus. An alternative choice campus and major may be indicated on the application, but applicants should list as an alternative campus only that campus of the California State University that they can attend. Generally, an alternate to an alternative choice campus, applicants will be considered automatically at the alternative choice campus if the first choice campus cannot accommodate them.

Impacted Programs
Impacted programs are undergraduate programs in which the number of applications received in the first month of the filing period exceeds the total spaces available, either locally (at individual campuses) or systemwide. Business Administration (upper division), Computer majors at San Diego State University, Science, Electrical Engineering, Nursing, and Telecommunications and Film are impacted during the first month of the filing period and may file more than one application and fee for additional programs. Nonresidents, foreign or domestic, are advised that there is little likelihood of being admitted to impacted programs. High school and community college counselors are informed before the opening of the fall filing period which programs will be impacted.

Supplementary Admission Criteria
Each campus with impacted programs uses supplementary admission criteria in screening applicants. Campuses are authorized to use a freshman applicant's ranking on the eligibility index, the transfer applicant's overall GPA, or a combination of campus-developed supplementary criteria in selecting those to be admitted. If you are a freshman applicant and plan to apply to an impacted program, you should take the ACT or SAT test at the earliest date. Your test scores and your grades earned in the final three years of high school may be used in determining admission to the program. The supplementary admission criteria used by the individual campuses to screen applicants appear periodically in the CSU School and College Review and are sent by the campuses to all applicants seeking admission to an impacted program.

Postbaccalaureate Application Procedures
All applicants for any type of postbaccalaureate status (e.g., master's degree applicants, those seeking credentials, second baccalaureate degrees, or second majors, and those interested in taking courses for personal or professional growth) must file a complete application within the appropriate filing period. A complete application for postbaccalaureate status includes all of the materials required for undergraduate applicants (Part A) plus the supplementary graduate admissions application (Part B). Postbaccalaureate applicants who completed undergraduate degree requirements and graduated the preceding term are also required to complete and submit an application and the $35 nonrefundable application fee. Since applicants for postbaccalaureate programs may be limited to the choice of a single campus per application, redirection to alternative campuses or later changes of campus choice will be minimal. In the event that a postbaccalaureate applicant wishes to be considered for admission to more than one campus, it will be necessary to submit separate applications (including fees) to each. Applications may be obtained from the Graduate Studies Office of any California State University campus in addition to the sources noted for undergraduate applicants.

Application Filing Periods

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<td>Fall Semester 1984</td>
<td>November 1, 1983</td>
<td>Each campus accepts applications until capacities are reached. Most campuses accept applications up to a month prior to the opening day of the term. Some campuses will close individual programs as they reach capacity.</td>
<td>December 1983</td>
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Space Reservation Notices

Normally you may expect to receive some form of space reservation notice from your first choice campus within two months of filing the application. A notice that space has been reserved is also a request for records necessary to make the final admission decision. It is an assurance of admission only if evaluation of your previous academic record indicates that admission requirements have been met. Such a notice is not transferable to another term or to another campus.

Hardship Petitions

There are established procedures for consideration of qualified applicants who were faced with extreme hardship if not admitted. Prospective hardship petitioners should write the Admissions Office regarding specific policies governing hardship admission.

Filing of Records

File Official Transcripts. The applicant must file the following official transcripts with the Admissions Office:

(1) Transcript from high school of graduation or last in attendance (not required of the graduate student who holds a bachelor’s degree from an accredited institution, but is required of the student who holds a bachelor’s degree from a nonaccredited institution).

(2) Transcripts from EACH college attended (excluding extension, correspondence, summer session, or evening courses). Graduate students must submit transcripts in duplicate if they plan to enter a master’s degree or credential program.

(3) Photostat or true copy of the military separation form DD-214 (or equivalent) if applicant has had active military service. (Not required of graduate students.)

A transcript will be considered official and accepted to meet the regulations governing admission only if forwarded directly to San Diego State University by the institution attended. All records or transcripts received by the university become the property of the university and will not be released nor will copies be made.

Completion of Required Tests

Admissions Tests

College Aptitude Test. The American College Test (ACT) or the Scholastic Aptitude Test (SAT) is required for matriculation of entering freshmen and transfer students with fewer than 56 semester or 84 quarter units of transferable college work. Applicants should consult the high school counselor or the San Diego State University Testing Office for dates and places where tests are given.

Test of English as a Foreign Language. Applicants whose native language is not English must attain satisfactory scores on the Test of English as a Foreign Language (TOEFL). For further information, see the section of this catalog on Admission of Foreign Students.

Placement Tests

English Placement Test. All students must demonstrate competency in writing skills. An exemption is required of those with fewer than 56 transferable semester units who do not meet the requirements of the local high school counselor or the San Diego State University Testing Office.

Graduate Record Examination (GRE) General Test. Students who will take the GRE General Test must submit a score report to the Admissions Office. Students who plan to enter a graduate degree program must take the GRE General Test.

Aptitude Tests of the American College Testing Program (ACT). These aptitude tests are required for admission to the College of Business Administration. Applicable scores will be used in making admission decisions.

Placement Tests

Lower division students (those with fewer than 56 transferable semester units) who do not meet the requirements of the local high school counselor or the San Diego State University Testing Office.

Grade Point Average and Test Score Requirement

To determine eligibility, the campus uses the grade point average (GPA) for the final two years of high school, which is determined by adding the student's total score from the ACT or SAT tests and dividing by 4. This score is then compared with the minimum required GPA for admission.

Residents: If the applicant graduated from a California high school or is a legal resident of California for tuition purposes, he or she needs a minimum index of 3.25 (3.6 for non-residents) to be eligible for admission.

Prerequisites

Applicants must complete the prerequisites for the major program. Students who do not meet the prerequisite requirements may be admitted on a provisional basis. Once admitted, students must complete the required courses and achieve a minimum grade of C- in each course before they can register for the next course in the sequence.

Transfer Admission

Applicants must have completed a minimum of 64 semester or 96 quarter units of transferable college work with a cumulative grade point average of 2.0 or better. This cumulative grade point average must be calculated using the GPA system and must include all college work taken in the U.S. or its equivalent. Students must also meet specific requirements for their intended major.

A satisfactory score on the EPT will satisfy the SDSU Writing Competency requirement; students who do not achieve a satisfactory score will be required to take the SDSU Writing Competency requirement before taking General Education Composition courses (see "Graduation Requirements" section of this catalog). The results of the EPT will not affect admissions eligibility.

Information bulletins and registration materials for the EPT will be mailed to all newly admitted students. Information about the EPT, including exemptions, may also be obtained from the Test Office.

Entry-Level Mathematics Examination. All students must demonstrate competency in mathematics. Students who did not meet the requirements of the 1983-84 or later catalogs who do not meet the exemption are required to pass the CSU Entry-Level Mathematics Examination (CSU Entry-Level Mathematics Examination) before taking any baccalaureate level mathematics or statistics course. Students required to take the CSU Entry-Level Mathematics Examination must do so as soon as possible after admission. Failure to take the examination within two semesters of admission will lead to withholding of registration privileges for a third semester (Section 41300.1 of Title 5, California Administrative Code and CSU Executive Order 159 and 338).

A satisfactory score on the ELM will satisfy the SDSU Mathematics Competency requirement; students who do not achieve a satisfactory score on the ELM will be required to retake the ELM and pass it before taking any baccalaureate level mathematics or statistics course or before graduation. The results of the ELM will not affect admissions eligibility.

Information bulletins and registration materials for the ELM will be mailed to all newly admitted students. Information about the ELM, including exemptions, may also be obtained from the Test Office.

Graduate Record Examination General Test. This test is required of most graduate students who enroll in an advanced degree program. Some departments, however, require the advanced test and students should consult the Graduate Bulletin. Students who intend to apply for membership in the graduate college of Business Administration must take the Graduate Management Admission Test (GMAT). Tests should be taken before filing an application for admission to an advanced degree program. Make reservations at the Test Office. Refer to the Graduate Bulletin for further information and for test dates.

Undergraduate Admission Requirements

First-time Freshman Applicants. First-time freshman eligibility is determined by (1) high school grade point average, (2) scores on either the ACT or SAT tests, (3) whether the applicant is a resident of California, and (4) whether four years of college preparatory English and two years of college preparatory mathematics have been completed.

Test Requirements. Applicants with fewer than 56 semester or 84 quarter units of transferable college work must submit scores for either the Scholastic Aptitude Test of The College Board (SAT) or the American College Testing Program (ACT). Registration forms and test dates for either test may be obtained from school or college counselors or from a campus Testing Office, or you may write to the following addresses:

The College Board (SAT)

Registration Unit, Box 592

American College Testing Program (ACT)

Registration Unit, Box 168

Princeton, New Jersey 08541

Iowa City, Iowa 52240

Grade Point Average and Test Score Requirement. To determine eligibility, the campus uses the grade point average (GPA) for the final two years of high school, which is determined by adding the student's total score from the ACT or SAT tests and dividing by 4. This score is then compared with the minimum required GPA for admission. The results of the ACT or SAT tests will not affect admissions eligibility.

Residents: If the applicant graduated from a California high school or is a legal resident of California for tuition purposes, he or she needs a minimum index of 3.25 (3.6 for non-residents) to be eligible for admission.
Courses in speech, drama, and journalism are acceptable if they include the kinds of reading and writing experiences described. Courses in remedial reading and writing are not college preparatory. Beginning or intermediate courses in English as a Second Language (ESL) are not considered college preparatory although a year of advanced level ESL is acceptable as one year of the four-year English requirement. If there are questions about which courses are college preparatory, a high school counselor or other staff can advise students.

College Preparatory Mathematics Requirement. Beginning with admission to the fall term 1984 and thereafter, all entering freshmen must have completed two years of high school college preparatory mathematics with grades of C or better. Most students will take algebra and geometry, second year algebra is strongly recommended. If the applicant plans to complete a college major in mathematics, science, engineering, computer science, premedicine, other science related fields, or business or economics, the applicant should take four years of college preparatory mathematics. Business or technical mathematics, arithmetic, prealgebra, and similar basic classes are not college preparatory.

Additional College Preparatory Courses Recommended. English and mathematics are not the only high school courses needed to prepare for college. There are many college courses in which the instructor will expect students to have had high school preparation in biology, physics, chemistry, history, economics, geography, as well as art and music. There are some college majors that require high school preparation in a foreign language.

Students should take full advantage of the college preparatory courses offered in high school, continuing their studies, particularly in English and mathematics, through the entire senior year. A solid college preparatory program will be valuable no matter where applicants go to college and will prepare them to compete on an equal basis with other students.

TOEFL Required of Applicants Who Attended Foreign Institutions. Beginning with admission to the fall term 1984 and thereafter, all undergraduate applicants, regardless of citizenship, who have not attended for at least three years schools at the secondary level or beyond where English is the principal language of instruction are required to earn a minimum score of 550 on the Test of English as a Foreign Language (TOEFL). Individual CSU campuses may require a higher minimum score.

Undergraduate Transfer Admission Requirements

Grade Point Average and Subject Requirements. If in good standing at the last college or university attended, applicants can qualify for admission by meeting one of the following standards.

1. They graduated from high school prior to spring 1984 and
   a. were eligible as a freshman and have a grade point average of 2.0 (C) or better in all transferable college units attempted, or
   b. were not eligible as a freshman and have completed at least 30 transferable semester units or 45 transferable quarter units, with a grade point average of 2.0 (C) or better if they are California residents for tuition purposes (2.4 if a nonresident).

2. They graduated from high school in the spring of 1984 or later, and
   a. were eligible as a freshman (see freshmen requirements) and have a grade point average of 2.0 (C) or better in all transferable* college units attempted, or
   b. were not eligible as a freshman except for the high school subject requirements in English and mathematics, have satisfied any deficiencies by equivalent course work, and have a grade point average of 2.0 (C) or better in all transferable college units attempted, or
   c. were not eligible as a freshman, have completed at least 30 transferable* semester units or 45 transferable* quarter units with a grade point average of 2.0 (C) or better if a California resident for tuition purposes (2.4 if a nonresident) and have satisfied any high school subject deficiencies in English and mathematics by equivalent course work.

Note: Effective fall 1986 and for all subsequent terms, transfer applicants must meet standard 2a, 2b, or 2c regardless of the date of high school graduation.

*Transferable courses are those designated for that purpose by the college where the courses are taken.
High School Students

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 program and does not constitute the right to continued enrollment.

Recommended Preparation for High School Students. Students entering San Diego State University in fall semester 1984 will be required to have four years of high school level English and two years of high school level mathematics. It is recommended that students entering from high school prepare adequately in the following subjects in addition to English and mathematics to ensure a successful academic career without need of remedial training.

Writing

Writing skills are essential to success in the university. Students must take four years of English classes which include instruction in writing. San Diego State requires a writing competency test and an English Placement Test prior to or during the student's first semester.

Mathematics

Mathematics competency is a graduation requirement at San Diego State and mathematical skills are categorized as basic for higher studies. All students must take at least two years of high school mathematics (elementary algebra and either intermediate algebra or geometry). All or engineering as their major should take a fourth year.

Social Science

All students need three years of social science including social studies, U.S. history, and government.

Science

All students should take at least two years of study to include a life science, a physical science and a laboratory. Students who expect to continue in science or engineering should take both physics and chemistry.

Humanities

Classes in humanities and fine arts subjects help students to develop perceptual and analytic skills and are excellent preparation for college work.

Foreign Language

Students are advised to take at least two years of the same language. Many degrees in the same language) at high school or a combination of high school and college course work. Academic achievement (3.75 GPA or higher) of high school students by issuing an early diploma or its equivalent. Details about the Early Admission Program may be obtained from the Office of Admissions and Records.

Other Applicants

Applicants not admissible under one of the above provisions should enroll in a community college or other appropriate institution. Only under the most unusual circumstances will such an applicant be admitted.

San Diego State University offers a special program designed to expand educational opportunities for qualified persons who, for a variety of reasons, have not previously had the benefit of high school education.

Admission of Postbaccalaureate and Graduate Students

All students holding a baccalaureate degree who desire to enroll at San Diego State University for postgraduate study must apply for admission to San Diego State University through the Office of Admissions. In making the application, they must observe the procedures outlined below.

Postbaccalaureate Standing (Unclassified)

For admission to unclassified postbaccalaureate standing, a student must: (a) hold an acceptable baccalaureate degree from an institution accredited by a regional accrediting association or have completed equivalent academic preparation as determined by an appropriate campus authority; (b) have attained a grade point average of at least 2.5 (A equals 4.0) in the last 60 semester (90 quarter) units attempted; and (c) have been in good standing at the last college attended. Admission to a California State University campus with postbaccalaureate unclassified standing does not constitute admission to graduate degree curricula.

Postbaccalaureate Standing (Classified)

A student who is eligible for admission to a California State University campus in unclassified standing may be admitted to classified postbaccalaureate standing for the purpose of enrolling in a particular postbaccalaureate credential or certificate program; provided that such additional professional, personal, scholastic, and other standards, including qualifying examinations, as may be prescribed for the particular program by the appropriate campus authority, are satisfied.

Graduate Standing (Conditionally Classified)

A student eligible for admission to a California State University campus under unclassified postbaccalaureate standing above but who has deficiencies in prerequisite preparation which in the opinion of the appropriate campus authority can be remedied by specified additional preparation, including qualifying examinations, may be admitted to an authorized graduate degree curriculum with conditionally classified graduate standing.

Graduate Standing (Classified)

A student eligible for admission to a California State University campus in unclassified or conditionally classified standing may be admitted to an authorized graduate program, as a classified graduate student upon meeting the professional, personal, scholastic, or other standards for admission to the graduate degree curriculum, including qualifying examinations, as the appropriate campus authority may prescribe. Only those applicants who show promise of success and fitness will be admitted to graduate degree curricula, and only those who continue to demonstrate a satisfactory level of scholastic competence and fitness shall be eligible to proceed in such curricula.

Second Bachelor's Degree

A student wishing to earn a second bachelor's degree in a major different from that declared for the previous degree may do so in most areas, provided the student's academic record indicates strong promise of success and the student can show clear evidence of a change in educational objective. A student seeking a second bachelor's degree, even if a recent graduate from SDSU, must apply for admission to the University unless already admitted to a conditional graduate status. The student must complete a minimum of 30 postbaccalaureate units in residence with a minimum grade point average of 2.0; at least 15 units must be upper division in the new major. Up to six upper division units in the new major may have been used to satisfy requirements for a previous major, provided the student had completed at least the same number of units in excess of the minimum requirements for the first degree. The student must fulfill all requirements for the degree, including additional general education and foreign language requirements where necessary, and have prior approval by the new major department and by the Dean of Undergraduate Studies.

Classified graduate students are not eligible to apply for a second bachelor's degree and credit earned in pursuit of a second bachelor's degree may not be applied toward an advanced degree at a later date.

For additional information, including the names of those departments participating in the Second Bachelor's Degree program, contact the Division of Undergraduate Studies or the University Advising Center.

Second Major for SDSU Graduates

A student wishing to return to the University after graduation from San Diego State University in order to complete a second major may do so in most areas provided the student qualifies for unclassified postbaccalaureate standing (2.50 grade point average on the last 60 units), has
Admission as an International (Foreign) Student

The admission of international (foreign) students is governed by separate requirements. Prospective students from abroad should consult the individual campus catalogs and international student informational brochures available from the campuses. Health insurance is available on campus at approximately $717 per year. Applicants for admission as an international (foreign) student must submit, prior to admission, official certificates and detailed transcripts of record from each secondary school and collegiate institution attended several months in advance of the opening of the semester in which the applicant expects to attend. International students from outside the United States will be considered for admission only for the fall semester. Canadian and Mexican students accompanied by certified English translations. Credentials will be evaluated in accordance with the priority is given to residents of California, nonresident applicants, including international students, are advised that there is little likelihood of being admitted to the following undergraduate majors: Business Administration, Computer Science, Electrical Engineering, Nursing, and Telecommunications and Film. All applicants whose major education was in a language other than English must score a 550 or more on the Test of English as a Foreign Language (TOEFL). This test is administered in the university can be granted Information as to the time and place at which this test is given is 0840, U.S.A. Upon arrival at San Diego State University, further tests of English may be given. Provisions for nonresident tuition purposes are not a complete discussion of the law, but a summary of the principal rules and their exceptions. The law governing residence determination for tuition purposes by The California State University is found in Education Code Sections 68000-68900, 68121, 68123, 68124, 68125, 68153, and 69048, and in Title 5 of the California Administrative Code, Sections 41900-41912. A copy of the statutes and regulations is available for inspection at the campus Admissions Offices. Legal residence may be established by an adult who is physically present in the state and who, at the same time, intends to make California his or her permanent home. Steps must be taken at least one year prior to residence determination date to show an intent to make California his or her permanent home with concurrent relinquishment of the prior legal residence. The steps necessary to show California residency intent will vary from case to case. Included among the steps may be registering to vote and voting in elections in California, filing resident California state income tax forms on total income; ownership of residential property or continuous occupancy or renting of an apartment on a lease basis where one's permanent belongings are kept; maintaining active resident memberships in California professional or social organizations; maintaining California vehicle plates and operator's license; maintaining active savings and listening skills necessary for university success. For those students who are enrolling in the American Language Institute, a program called conditional admission is available. It is for those students who require acceptance to a university in order to obtain a passport, a U.S. visa, or government sponsorship. The program is offered to students who do not have an adequate command of English or the required TOEFL (Test of English as a Foreign Language) score to qualify for admission to the University. After transcripts of their academic work have been evaluated by SDSU staff, students may receive an official letter of conditional admission which states that the student has met all University requirements except English-language proficiency and may enter the University after appropriate TOEFL scores and training at the American Language Institute. Arrangements for housing will be completed well in advance of the student's arrival on the campus. Detailed information regarding housing may be obtained from the Housing and Residential Life Office, San Diego State University. Scholarship aid for entering students is limited; no scholarships are specifically reserved for students from another country. Further information regarding scholarships will be found in the section of this catalog on Financial Aid. Upon arrival at San Diego State University the student should contact the Office of International Student Services.

Limitation of Enrollment

Admission to a state university must be restricted in relation to the number of students for whom an adequate college education can be provided by the staff and facilities available. The Trustees have authority on this matter.

Registration

San Diego State University students are afforded the opportunity to participate in an Advance Registration system. On-campus registration is also held prior to the beginning of the semester. The Class Schedule and Student Information Handbook, issued each semester and available from the campus bookstore prior to the registration period, contains specific information on registration, the courses offered for the term, and a listing of the fees required for registration. Fees are due and payable at the time of registration and depend on the number of units selected. Failure to pay fees may result in cancellation of registration. For policies governing registration after classes begin, consult the current Class Schedule.

Determination of Residence for Nonresident Students

Tuition Purposes

The campus Admissions and Records Office determines the residence status of all new and returning students for nonresident tuition purposes. Responses to items 29-45 on the Application for Admission and, if necessary, other evidence furnished by the student are used in making this determination. A student who fails to submit adequate information to establish a right to classification as a California resident will be classified as a nonresident and will be required to pay out-of-state fees.

The following statement of the rules regarding residency determination for nonresident tuition purposes is not a complete discussion of the law, but a summary of the principal rules and their exceptions. The law governing residence determination for tuition purposes by The California State University is found in Education Code Sections 68000-68900, 68121, 68123, 68124, 68125, 68153, and 69048, and in Title 5 of the California Administrative Code, Sections 41900-41912. A copy of the statutes and regulations is available for inspection at the campus Admissions Offices.

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Legal residence may be established by an adult who is physically present in the state and who, at the same time, intends to make California his or her permanent home. Steps must be taken at least one year prior to residence determination date to show an intent to make California his or her permanent home with concurrent relinquishment of the prior legal residence. The steps necessary to show California residency intent will vary from case to case. Included among the steps may be registering to vote and voting in elections in California, filing resident California state income tax forms on total income; ownership of residential property or continuous occupancy or renting of an apartment on a lease basis where one's permanent belongings are kept; maintaining active resident memberships in California professional or social organizations; maintaining California vehicle plates and operator's license; maintaining active savings and listening skills necessary for university success. For those students who are enrolling in the American Language Institute, a program called conditional admission is available. It is for those students who require acceptance to a university in order to obtain a passport, a U.S. visa, or government sponsorship. The program is offered to students who do not have an adequate command of English or the required TOEFL (Test of English as a Foreign Language) score to qualify for admission to the University. After transcripts of their academic work have been evaluated by SDSU staff, students may receive an official letter of conditional admission which states that the student has met all University requirements except English-language proficiency and may enter the University after appropriate TOEFL scores and training at the American Language Institute. Arrangements for housing will be completed well in advance of the student's arrival on the campus. Detailed information regarding housing may be obtained from the Housing and Residential Life Office, San Diego State University. Scholarship aid for entering students is limited; no scholarships are specifically reserved for students from another country. Further information regarding scholarships will be found in the section of this catalog on Financial Aid. Upon arrival at San Diego State University the student should contact the Office of International Student Services.
and checking accounts in California banks; maintaining permanent military address and home of record in California if one is in the military service.

The student who is within the state for educational purposes only does not gain the status of resident regardless of the length of the student’s stay in California. In general, the unmarried minor (a person under 18 years of age) derives legal residence from the parent with whom the minor maintains his or her place of abode. The residence of a minor cannot be changed by the minor or the minor’s guardian, so long as the minor’s parents are living.

A married person may establish his or her residence independent of spouse.

An adult alien may establish his or her residence, unless precluded by the Immigration and Nationality Act from establishing domicile in the United States.

Nonresident students seeking reclassification are required by law to complete a supplemental questionnaire concerning financial independence.

The general rule is that a student must have been a California resident for at least one year immediately preceding the residence determination date in order to qualify as a ‘resident student’ for tuition purposes. A residence determination date is set for each academic year and is the date from which residence is determined for that term. The residence determination dates for the 1984-85 academic year are September 20, 1984 and January 25, 1985. Questions regarding residence determination dates should be directed to the Legal Residence Office in the Admissions Office which can give you the residence determination date for the term for which you are registering.

There are exceptions for nonresident tuition, including:

1. Persons below the age of 19 whose parents were residents of California but who left the state while the student who remained was still a minor. When the minor reaches age 18, the exception continues for one year to enable the student to qualify as a resident student.
2. Persons who have been present in California with the intent of acquiring residence for more than a year before the residence determination date, and entirely self-supporting for that period of time.
3. Persons below the age of 19 who have lived with and been under the continuous direct care and control of an adult, not a parent, for the two years immediately preceding the residence determination date. Such adult must have been a California resident for the most recent year.
4. Dependent children and spouses of persons in active military service stationed in California on the residence determination date. This exception applies only for the minimum time required for the student to obtain California residence and maintain that residence for a year. The exception, once attained, is not affected by retirement or transfer of the military person outside the state.
5. Military personnel in active service stationed in California on the residence determination date for purposes other than education at state-supported institutions of higher education. This exception applies only for the minimum time required for the student to obtain California residence and maintain that residence for a year.
6. Full-time State University employees and their children who are not gainfully employed. This exception applies only for the minimum time required for the student to obtain California residence and maintain that residence for a year.
7. Certain exchange students.
8. Certain children of deceased police officers or fire suppression employees who were duties.

Any student, following a final campus decision on his or her residence classification only may make written appeal to:

The California State University
Office of General Counsel
400 Golden Shore
Long Beach, California 90802

within 120 calendar days of notification of the final decision on campus of the classification. The student is further reviewed. Students classified incorrectly as residents or incorrectly granted payment of nonresident tuition in arrears. It incorrect classification results from false or concealed facts, the student is subject to discipline pursuant to Section 41301 of Title 5 of the California Administrative Code. Resident students who become nonresidents, and nonresident students qualifying for exceptional whose basis for so qualifying changes, must immediately notify the Admissions Office. Applications for a change in classification with respect to a previous term are not accepted.

The student is cautious that this summation of rules regarding residency determination is by no means a complete explanation of their meaning. The student should also note that changes may have been made in the rate of nonresident tuition, in the statutes, and in the regulations between the time this catalog is published and the relevant residence determination date.

**Academic Advising**

Academic advising is organized according to major. All students must comply with advising requirements established for their major(s) and described in the Courses and Curricula section of this catalog. For additional help, students with a declared major or interest in a particular major should consult with the advising center or assistant dean for student affairs in the college of that major. Students who are undecided about their majors should consult with the University Advising Center. Besides the advising centers listed below, each department and academic program maintains advisers who may be consulted on specific questions related to their programs. These departmental and program advisers may be reached through any of the college advising centers listed below or through the University Advising Center. Most advising centers are open Monday through Friday between 9:00 a.m. and 4:30 p.m. Services are available either by appointment or on a drop-in basis.

**College of Arts and Letters Advising Center**

(Social Sciences, Room 132)

All College of Arts and Letters majors are urged to consult with their department adviser as soon as possible; they are required to meet with their department adviser within the first two semesters after declaration or change of major.

In addition, all students who intend to major in the College of Arts and Letters and who have fewer than 56 units are required, before or during their first semester at San Diego State University, to consult with the College of Arts and Letters Student Advising Center (SS-132) for general education advising.

**African-American Studies**

**American Literature**

**Asian Studies**

**Classical & Oriental Languages**

**Comparative Literature**

**Economics**

**English**

**European Studies**

**Geography**

**Languages**

**Latin American Studies**

**Linguistics**

**Mexican-American Studies**

**Philosophy**

**Political Science**

**Religious Studies**

**Social Science**

**Sociology**

**Spanish & Portuguese**

**Women's Studies**

**College of Business Administration Advising Center**

(Business Administration, Room 441)

**Accounting**

**Business Education**

**Finance**

**Marketing**

**Management**

**Real Estate**

**College of Education Admissions and Advising Center**

(Education, Room 100)

**Community College**

**Counselor Education**

**Educational Administration**

**Educational Technology**

**Elementary Education**

**Librarianship**

**Multicultural Education**

**Secondary Education**

**Special Education**

**College of Engineering Advising Center**

(College of Engineering, Room 426B)

**Aerospace Engineering**

**Civil Engineering**

**Electrical Engineering**

**Mechanical Engineering**

**Psychology**

**Public Administration**

**Social Science**

**Sociology**

**Spanish & Portuguese**

**Women's Studies**
Teaching credential requirements. Advisement concerning requirements for the single subject (secondary school) and the multiple subjects (elementary school) credentials is available through the College of Education's Admissions and Advising Office. The office is located in room 100 of the College of Education and is open Monday through Friday from 9:00 a.m. to 12:00 noon and 1:00 p.m. to 4:30 p.m. Students should consult with the credential adviser in their major department for particular course requirements for the single subject credential.

Preprofessional advising. Advisement for students planning to attend professional schools is available through the following offices: pre dentistry, Life Sciences, room 135; prelaw, Social Science, room 131; premedicine, Life Sciences, room 135; preoccupational therapy, Life Sciences, room 407; preoptometry, Life Science, room 407; prepharmacy, Life Sciences, room 407; prephysical therapy, Life Sciences, room 407; preveterinary medicine, Life Sciences, room 135. Advisers in prelaw are not available during the summer months.

Additional Advisory Services Provided Through Following Programs

New student orientation. As a new semester approaches, all incoming students are invited to attend a one-day orientation program called Academic Information Day. Advisement is an important part of each program, including General Education requirements and small group meetings with the assistant deans from the various colleges. Questions concerning orientation can be directed to the Student Resource and Information Center, Campus Laboratory School, Room 114, (619) 265-5221.

Transcript Evaluation

Official evaluations may be requested at the Evaluations Office (AD-127) by currently enrolled students with declared majors who have completed 56 semester units.

Appointments may be scheduled with evaluators by students with questions concerning their evaluations.
General Regulations

Student Responsibility for Catalog Information

Students are held individually responsible for the information contained in this catalog. The requirements listed in the "Graduation Requirements" section of the catalog are those requirements which the University will make every effort to preserve for students subject to this catalog. All other parts of the catalog, including this "General Regulations" section, are subject to change from year to year as University rules, policies, and curricula change. Failure to keep informed of such changes will not exempt students from whatever penalties they may incur.

Changes in Rules and Policies

Although every effort has been made to assure the accuracy of the information in this catalog, students and others who use this catalog should note that laws, rules, and policies change from time to time and that these changes may alter the information contained in this publication. Changes may come in the form of statutes enacted by the Legislature, rules and policies adopted by the Board of Trustees of The California State University, by the Chancellor or designee of The California State University, or by the President or designee of the institution. Furthermore, it is not possible in a publication of this size to include all of the rules, policies, and other current or complete information. An office, administrative office, each semester, the Class Schedule and Student Information Handbook outlines changes in Academic Policy and Procedure and current deadlines which are of importance to students.

Nothing in this catalog shall be construed, operate as, or have the effect of an abridgment of the right of students to access their education records and the release of such information govern access to student records: and the right of the student to challenge the content of student records; the right of students to request or receive copies of records; the right of the student to review and expunge student records: (5) the access to information included in "directory information," which student requests not be released, Students shall be given an opportunity to restrict the release of "directory information" about themselves at the time of registration.

The campus is authorized to release the "directory information" concerning students. "Directory information" includes the student's name, address, telephone listing, 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, degrees and awards received, and the most recent previous educational agency or institution attended by the student. The above-mentioned information is subject to release by the campus at any time unless the campus has received prior written objection from the student specifying information which the student requests not be released. Students shall be given an opportunity to restrict the release of "directory information" about themselves at the time of registration.

The campus is authorized to provide access to student records to campus officials and employees who have legitimate educational interests in such access. Those persons are those who have responsibilities in connection with the campus' academic, administrative or service functions and who have reason for using student records connected with their campus or other related academic responsibilities.

Nondiscrimination Policy

Handicap

The California State University does not discriminate on the basis of handicap in admission or access to, or treatment or employment in, its programs and activities. Section 504 of the Rehabilitation Act of 1973, as amended, and the regulations adopted thereunder prohibit such discrimination. The Office of Student Affairs has been designated to coordinate the efforts of San Diego State University to comply with the Act in its implementing regulations. Inquiries concerning compliance may be addressed to this office at AD-231; telephone 265-5211.

Race, Color, or National Origin

The California State University complies with the requirements of Title VI of the Civil Rights Act of 1964 and the regulations adopted thereunder. No person shall, on the grounds of race, color, or national origin, be denied the benefits of, or be otherwise subjected to discrimination under any program of The California State University. Inquiries concerning the application of Title VI to program activities of San Diego State University may be referred to the Affirmative Action Officer, ED-156, 265-6464.

Sex

The California State University does not discriminate on the basis of sex in the educational programs or activities it conducts. Title IX of the Education Amendments of 1972, as amended, and the Title IX of Education Amendments of 1972, as amended, and the regulations adopted thereunder prohibit discrimination on the basis of sex in education programs and activities operated by San Diego State University. Such sex in education programs and activities include admission of students and employment. Inquiries concerning such matters may be referred to the Affirmative Action Officer, ED-156, 265-6464.

Registration and Computation of Grades

Registration of Grades

At the end of each semester or summer session in which a student is enrolled, a report of courses taken, showing units and grades earned is sent to the student. Grades and grade points used in computing are as follows: A (outstanding achievement), B (praiseworthy performance, the most common average), C (average: awarded for satisfactory performance), D (minimal passing, generally lower than the typical undergraduate grade), F (failing), W (withdrawal), SP (satisfactory progress, not counted in the grade point average), AU (audit), O (not earned and not counted in the grade point average), CR (credit), signifying units earned, but not earned and not counted in the grade point average.


The campus is authorized under the Act to release "directory information" concerning students. "Directory information" includes the student's name, address, telephone listing, 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, degrees and awards received, and the most recent previous educational agency or institution attended by the student. The above-mentioned information is subject to release by the campus at any time unless the campus has received prior written objection from the student specifying information which the student requests not be released. Students shall be given an opportunity to restrict the release of "directory information" about themselves at the time of registration.

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counted in the grade point average. NC (no credit), no credit earned and not counted in the grade point average. If authorized incomplete), no credit earned and not counted in the grade point average until one calendar year has expired at which time it will count as an “F” for grade point average computation; U (unauthorized incomplete), counted as “F” for grade point average computation.

Plus/Minus Grading
A plus/minus grading system is utilized at San Diego State University. Plus/minus grading is not mandatory but is utilized at the discretion of the individual instructor. The grades of A+, A-, B+, B-, C+, C-, D+, D-, and F are not issued. The decimal values of plus and minus grades are utilized in the calculation of grade point averages as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.30</td>
</tr>
<tr>
<td>A</td>
<td>4.00</td>
</tr>
<tr>
<td>A-</td>
<td>3.70</td>
</tr>
<tr>
<td>B+</td>
<td>3.30</td>
</tr>
<tr>
<td>B</td>
<td>3.00</td>
</tr>
<tr>
<td>B-</td>
<td>2.70</td>
</tr>
<tr>
<td>C+</td>
<td>2.30</td>
</tr>
<tr>
<td>C</td>
<td>2.00</td>
</tr>
<tr>
<td>C-</td>
<td>1.70</td>
</tr>
<tr>
<td>D+</td>
<td>1.30</td>
</tr>
<tr>
<td>D</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Satisfactory Progress Grade — "SP"
The "SP" symbol is used in connection with courses that extend beyond one academic term, date, but that assignment of a precise grade must await completion of additional work. Work is theses (798A) or dissertation (899). Failure to complete the assigned work within one calendar year except for graduate year except for courses 798A and 899 will result in the course being computed into the grade point average as an “F” or (or a “NC”) if the course was taken for credit/no credit grade.

Withdrawal Grade — "W"
The symbol "W" indicates that the student was enrolled and was permitted to drop a course after the end of the tenth day of instruction because of a verified serious and compelling reason and has dropped the course after the end of the tenth day of instruction. A change of program form and returning that form to the Change of Program booth (Administration Building) on or before the fifteenth day of instruction. No changes in grading basis are permitted after that date.

Instructor's Grade of Final Grade — "F" The symbol "F" (final grade) indicates that the work is complete and evaluated. Final grades shall not be assigned when the student's control and the student's control in the course as an "F" grade.

Unauthorized Incomplete Grade — "U"
The symbol "U" indicates that an enrolled student did not withdraw from the course before the end of the eleventh week of instruction but that the student's control in the course as an "F" grade. The student's control in the course as an "F" grade.
Repeated Course

An undergraduate student who receives an unsatisfactory grade (less than 2.0 grade points per unit) may repeat the course at San Diego State University except in those cases where enrollment in the course is restricted and the student no longer qualifies for admission. While the original grade will remain on the transcript, only the second grade will be used in computation of grade point averages. The course repeat policy does not apply to courses repeated through Open University if a course is taken for a third (or more) time(s), all grades except the original grade will be used in computing grade point averages. A student may not repeat a course in which a grade of "C" or better was received. In addition, the only courses which may be repeated with a Credit/No Credit option are those in which the student previously received a grade of No Credit. A course previously taken for a grade is repeated for a grade of Credit, the original grade will continue to be used in computation of the grade point average. This policy applies to courses taken initially at other institutions as well as at San Diego State University.

Assignment of Grades and Grade Appeals

1. Faculty have the right and responsibility to provide careful evaluation and timely assignment of appropriate grades.
2. There is a presumption that grades assigned are correct. It is the responsibility of anyone appealing an assigned grade to demonstrate otherwise.
3. Students who believe that an appropriate grade has not been assigned should first seek to resolve the matter informally with the instructor of record. If the matter cannot be resolved informally, the student may present his/her case to the appropriate campus entity. Have it reviewed and, where justified, receive a grade correction.

Courses

Satisfaction of Requirements

Except as permitted in the Graduation Requirements section of the catalog, a course cannot be used to satisfy more than one requirement.

Numbering Courses

Courses numbered 100 through 299 are in the lower division (freshman and sophomore years); those numbered 300 through 499 are in the upper division (junior and senior years); and are also acceptable for advanced degrees. Those numbered 600 through 799 are graduate courses; and those numbered 800 through 999 are doctoral courses. Courses numbered community groups and are applicable as general elective credit toward an undergraduate through X-999 are designated as lower division and X-950 credit. It is the prerogative of the academic department to determine if an X-900 level course is applicable to a minor, a major, or toward classes at X-900 level are acceptable as advanced degrees. Including extension programs. SDSU should consult the sponsoring academic department to ascertain the applicability of X-900 level courses offered in any certificate program toward their proposed course of study.

Final Examinations

No final examination shall be given to individual students before the regular time. Any arrangements with the instructor to have an incomplete grade reported and must take the form of a fee.

Academic Credit Through Course Work

Credit for Upper Division Courses

Normally, only juniors, seniors and graduate students enroll in upper division courses (numbered 300 and above). However, a freshman or sophomore may enroll in an upper division course for upper division credit if the instructor consents. Article 40405.2 of Title 5, California Administrative Code specifically limits upper division general education credit to students who have achieved upper division status.

Community College Credit

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.

Concurrent Master's Degree Credit

A senior who is within 12 units of completing requirements for the bachelor's degree and whose grade point average in the last 60 semester units attempted is 3.0 or above may petition the Graduate Council to take for concurrent master's degree credit 500-numbered courses in the Graduate Bulletin as acceptable for master's degree programs, and certain 600- and 700-numbered courses approved by the department, with the remaining requirements for the bachelor's degree. Petitions may be obtained from the Graduate Division office and must be submitted to the Evaluations office of Admissions and Records by the end of the first week of classes of the semester or term in which the concurrent credit is earned. The bachelor's degree must be completed at the end of the semester or term in which the concurrent credit is earned. The maximum number of units which may be earned as concurrent master's degree credit is determined by the difference between the number of units remaining for the bachelor's degree and 15.

Concurrent Postbaccalaureate Credit

Applicable to the "Fifth Year" Credential Requirement Only

Concurrent postbaccalaureate credit may be earned during the final undergraduate semester or summer session by seniors admitted to the College of Education who meet all of the following qualifications: 1. Have a minimum grade point average of 2.5 on the last 60 units attempted. 2. Complete course work in excess of graduation requirements during the semester (or summer session) when graduation occurs. 3. Attempt no more than 18 units during the final undergraduate semester (or 15 units during summer session). 4. Request no more than a maximum of 12 units of 300-, 400-, or 500-numbered courses for postbaccalaureate credit. 5. Submit petition before the end of the first week of classes (or the first week of summer session). 6. Petition the Dean of the College of Education. 7. Graduates at the end of the semester (or summer session) the petition is made. Extension courses are not acceptable for concurrent postbaccalaureate credit. Concurrent postbaccalaureate credit will not be granted retroactively.

Credit for Extension Courses

The maximum amount of extension and correspondence credit which may be accepted toward the minimum requirements for the bachelor's degree is 24 semester units. Extension credit do not count in the calculation of the minimum residence requirement. A maximum of nine units in extension courses at San Diego State University may be accepted. A maximum of nine units in extension courses at San Diego State University may be accepted. Extension courses are not accepted for concurrent postbaccalaureate credit. Concurrent postbaccalaureate credit will not be granted retroactively. Petition forms are available in the Evaluations Office, AD-127.

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Continuing education courses offered by departments are of two kinds. The first includes regular courses listed in the General Catalog which are available for use by students in meeting college and university credit requirements of various kinds, and are usually at the upper division level. A second kind is offered by some departments at the X-900 level and serves to meet the needs of specific community groups.

Courses numbered 100 through 299 are in the lower division (freshman and sophomore years); those numbered 300 through 499 are in the upper division (junior and senior years) and are generally considered major courses; those numbered 500 through 599 are in the upper division and are also acceptable for advanced degrees; those numbered 600 through 799 are graduate courses; and those numbered 800 through 999 are doctoral courses. Courses numbered X-900-X-999 are those offered only through Extension to meet specific academic needs of community groups and are applicable as general elective credit toward an undergraduate degree at SDSU. Courses X-900 through X-949 are designated as lower division and X-950 through X-999 are designated as upper division. It is the prerogative of the academic department/college to determine if an X-900 level course is applicable to a major, a minor, or toward specified electives. The X-900 level courses are offered in conjunction with certificate programs only. Courses at the X-900 level are not acceptable on advanced degree programs.

Extended Studies students who eventually plan to pursue an undergraduate degree at SDSU should consult the sponsoring academic department to ascertain the applicability of X-900 level courses offered in any certificate program toward their proposed course of study.

**Academic Credit Through Examination**

San Diego State University grants credit to those students who pass examinations that have been approved for credit systemwide. These include the CSU English Equivalency Examination and some CLEP examinations. Information bulletins and registration materials may be obtained from the Test Office (LE-560, 265-5216). Scores should be forwarded to the Admissions Office for evaluation.

**Credit by Examination**

Students may challenge courses by taking examinations developed at San Diego State University. Semester units will be awarded to those who pass the examinations successfully and the grade (s) earned including “F” will be used in San Diego State University grade point calculations. At the discretion of the department a grade of C or NC may be awarded instead of letter grades for credit.

Students interested in applying for credit-by-examination need to check with the appropriate department(s) since each department has the option of excluding any or all of its courses. Approval to receive undergraduate credit-by-examination is granted at the discretion of the department.

1. The student must be matriculated, in good standing (not on probation), be registered in at least one regular course (not Extension) at the time credit-by-examination is authorized, and pay for additional units if cost exceeds fees already paid.

2. Application for credit-by-examination must be made within the time limits for filing a change of program as listed in the Academic Calendar each semester.

3. Approval of the department chair and the Dean of the College concerned is required prior to taking the examination. Forms for approval may be obtained from the Evaluations Office.

4. Credit-by-examination is restricted to regular undergraduate courses listed in the General Catalog; does not include 600- and 700-numbered, or Extension courses; cannot be applied toward an associate degree.

5. Credit-by-examination is not treated as part of the student’s academic load and, therefore, is not considered by the Veterans Administration in the application of their regulations, and is not applicable toward an associate degree or certificate.

6. Credit may be awarded at SDSU for courses which duplicate credit already allowed for examinations as listed under SDSU course equivalents.

7. If more than one examination is satisfactorily passed, additional units credit will be provided.

8. Students must also take Music Placement Examination.

9. All courses credit will be provided if the student has attained a score at or above 500 on each test of the General Examinations of the College Level Examination Program exclusive of English. Credit may also be allowed for the Special Examinations of the College Level Examination Program in mathematics. Scores should be forwarded to the Admissions Office for evaluation.

**Credit for Advanced Placement Examinations**

San Diego State University grants credit toward its undergraduate degrees for successful completion of examinations of the Advanced Placement Program of The College Board. Students who present scores of three or better will be granted 3 to 10 semester units of college credit.

High school students who intend to participate in this program should make the necessary arrangements with their high schools and should indicate at the time they take the Advanced Placement Examinations that their test scores be sent to San Diego State University. To obtain credit and advanced placement, the student should contact the Evaluations Office.

The chart below indicates the score necessary, the units earned and the course equivalents for each of the examinations offered.

<table>
<thead>
<tr>
<th>Examination</th>
<th>Score</th>
<th>Semester units credit allowed toward degree</th>
<th>SDSU course equivalents*</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art History</td>
<td>3, 4, 5</td>
<td>6</td>
<td>Art 258 and 259</td>
<td></td>
</tr>
<tr>
<td>Art Studio</td>
<td>3, 4, 5</td>
<td>6</td>
<td>Art 100 and 101</td>
<td></td>
</tr>
<tr>
<td>Chemistry</td>
<td>3, 4, 5</td>
<td>10</td>
<td>Chemistry 200, 201</td>
<td></td>
</tr>
<tr>
<td>Classics</td>
<td>3, 4, 5</td>
<td>6</td>
<td>Classics 202, 203</td>
<td></td>
</tr>
<tr>
<td>English</td>
<td>3, 4, 5</td>
<td>6</td>
<td>English 100 and 200</td>
<td></td>
</tr>
<tr>
<td>French</td>
<td>3, 4, 5</td>
<td>6</td>
<td>French 200A and 200B</td>
<td></td>
</tr>
<tr>
<td>German</td>
<td>3, 4, 5</td>
<td>6</td>
<td>German 201 and 211</td>
<td></td>
</tr>
<tr>
<td>History</td>
<td>3, 4, 5</td>
<td>6</td>
<td>History 110A-110B</td>
<td></td>
</tr>
<tr>
<td>Mathematics</td>
<td>3, 4, 5</td>
<td>6</td>
<td>Mathematics 150 and 151</td>
<td></td>
</tr>
<tr>
<td>Music</td>
<td>3, 4, 5</td>
<td>6</td>
<td>Music 159A-159B</td>
<td></td>
</tr>
<tr>
<td>Physics</td>
<td>3, 4, 5</td>
<td>6</td>
<td>Physics 180A-180B and 82A-82B</td>
<td></td>
</tr>
<tr>
<td>Spanish</td>
<td>3, 4, 5</td>
<td>6</td>
<td>Spanish 201 and 211</td>
<td></td>
</tr>
<tr>
<td>Latin</td>
<td>3, 4, 5</td>
<td>6</td>
<td>Latin 305A-305B</td>
<td></td>
</tr>
</tbody>
</table>

* Credit may be earned at SDSU for courses which duplicate credit already allowed for examinations as listed under SDSU course equivalents.

**Student must also take Music Placement Examination.

**Credit for College Level Examination Program (CLEP)**

San Diego State University will consider the granting of credit to those students who have attained a score at or above 500 on each test of the General Examinations of the College Level Examination Program exclusive of English. Credit may also be allowed for the Special Examinations of the College Level Examination Program in mathematics. Scores should be forwarded to the Admissions Office for evaluation.
Credit for Instruction in Noncollegiate Settings

San Diego State University grants undergraduate degree credit for successful completion of formal instruction in noncollegiate settings, either military or civilian, 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 will be considered to be elective units in most cases. Petitions for acceptance of credits toward specific requirements are available in the Admissions and Records Office (AD-127). Applicability to specific degree requirements (General Education, Major, Minor, etc.) is subject to approval of the appropriate campus authority.

Academic Credit for Military Service

The university is guided by the recommendations of the American Council on Education in granting undergraduate credit toward the bachelor's degree for military service. Postgraduate credit is not granted.

To obtain credit for military service, the student must be fully matriculated, be enrolled at the University, and submit Form DD-214 or DD-285.

Student Classification

A matriculated student is one who has complied with all requirements for admission to the university and has received his/her Notice of Admission. All students taking courses in any regular semester must be matriculated students. Only in summer sessions, winter sessions, or extension courses may a student who has not matriculated be accepted for enrollment.

Each student who enrolls in one or more summer session classes shall be classified as a summer extension student. Each student who enrolls in one or more extension classes shall be classified as a postbaccalaureate student. Such students need not matriculate as a prerequisite for enrollment in these classes.

Freshman. A student who has earned a total of fewer than 30 semester units.
Sophomore. A student who has earned a total of 30 to 59 semester units, inclusive.
Junior. A student who has earned a total of 60 to 89 semester units, inclusive.
Senior. A student who has earned a total of 90 semester units or more.
Graduate. A student who has completed a four-year college course with an acceptable baccalaureate degree from an accredited institution and has been admitted to the University at the Graduate Bulletin.

Student Program and Records

Transcripts of Record

A student may obtain an official transcript of his/her record by filing an application at the Admissions and Records Office. A fee is charged for all transcripts and must be paid in advance. One week should be allowed for the processing and mailing of the transcript.

Unofficial Transcripts

Students may obtain an unofficial copy of their SDSU transcript by paying the unofficial transcript fee at Admissions and Records. These transcripts are usually available on an offer of a 48-hour turnaround. These records do not bear the seal of the University and are not suitable for transfer purposes. Unofficial copies will be made only of the SDSU transcript.

Full-time Student Status

Requirement for Full-time Student Status at SDSU is 12 units per semester. Graduate units Services area of Admissions and Records verifies student enrollment for students in-person with proper identification and through the mail with an authorized signature from the student.

Prerequisites/Provisional Enrollment

Prerequisites will be enforced in all sections of courses listed in the Academic Policy pages of the current Class Schedule and Information Handbook. Students who register for those courses through Walk-Through Registration, Advance Registration, or Schedule Change, will be provisionally enrolled only; official enrollment will depend on the student's verification of prerequisites. In the event that the student cannot verify prerequisites, the instructor reserves the right to disenroll the student administratively.

Change of Program

San Diego State University provides for change of program beginning the first day of classes every term. Change of program includes: withdrawal from a class, adding a class, adding or reducing units of a class for which the student is already registered, changing a section of the same class, or changing grading options.

Students are responsible for every course on their official study list filed at registration. If a student does not attend the first class meeting of the semester and is not present at the start of the second meeting, the professor may give that student's place to another student, however, if this occurs, the student must still take the necessary formal drop action personally.

Changes of program cannot be effected by nonattendance in class; nonattendance without consequent formal drop action will result in a failing grade.

Dropping a class after the end of the tenth day of instruction and prior to the last three weeks of instruction is permissible only for serious and compelling reasons. Permission to drop a class during this period is granted only with the signature of the instructor, who indicates the student's status in the class, and the approval of the Dean of Designee, and approvals are made in writing on prescribed forms. Students are not permitted to drop a class during the final three weeks of instruction, except in cases such as accident or serious illness where the cause of dropping the class is due to circumstances clearly beyond the student's control and the assignment of an Incomplete is not practicable.

All such requests must be accompanied by appropriate verification. Ordinarily withdrawals in this category will involve total withdrawal from the campus, except that credit, or an Incomplete, may be assigned for courses in which sufficient work has been completed to permit an evaluation to be made. Requests to withdraw under such circumstances must be approved by the dean (or designee) of the college of the student's major.

Change of grading option is not permitted after the end of the fifteenth day of instruction.

Deadlines

1. Dropping courses will be permitted with no penalty or restriction only until the end of the tenth day of instruction.
2. Adding courses or complete withdrawal from the University will be allowed without penalty or restriction until the end of the fifteenth day of instruction.
3. Change of grading option will NOT be permitted after the fifteenth day of instruction.

Change of Major or Curriculum

At the time of admission to the university, each undergraduate student is assigned to a major field or curriculum, or is designated as an undeclared major. After registration, all students wishing to change their major or curriculum must make application at the Evaluations Office. Students Veterans using veteran benefits must obtain appropriate approval from the Veterans Administration for necessary changes in letters of eligibility.

Academic Renewal

Under certain circumstances the campus may disregard up to two semesters or three quarters of previous undergraduate course work taken at any college from all considerations associated with requirements for the baccalaureate degree. These circumstances are:

1. The student has requested the action formally and has presented evidence that work completed in the term(s) under consideration is substandard and not representative of present scholastic ability and level of performance; and
2. The level of performance represented by the term(s) under consideration was due to extenuating circumstances; and
3. There is every evidence that the student would find it necessary to complete additional units and enroll for one or more additional terms in order to qualify for the baccalaureate if the requirements for graduation were not approved.

Final determination that one or more terms shall be disregarded in determination of eligibility for graduation shall be based upon a careful review of evidence by a committee appointed by the President which shall include the Vice President for Academic Affairs and consist of at least three members. Such final determination shall be made only when:

1. Five years have elapsed since the most recent work to be disregarded was completed.
2. The student has completed at SDSU since the most recent work to be disregarded was completed, 15 semester units with at least a 3.0 GPA, 30 semester units with at least a 2.5 GPA, or 45 semester units with at least a 2.0 GPA. Work completed at another institution cannot be used to satisfy this requirement.

When such action is taken, the student's permanent academic record shall be annotated so that it is readily evident to all users of the record that no work taken during the disregarded term(s), even if satisfactory, may apply toward baccalaureate requirements. However, all work must remain legible on the record ensuring a true and complete academic history.

The procedure for filing Petition for Academic Renewal as follows:

1. Obtain the Petition from the Division of Undergraduate Studies, AD-223.
2. Fill in the form carefully and completely.
3. Attach statements and documentary evidence from doctors, lawyers, employers, parents, professors or other appropriate persons to substantiate your claim that the request is justified.
4. Obtain all necessary clearances and signatures.
5. Return all materials to the Admissions and Records Office.

Withdrawal, Leave of Absence, Readmission, and Evaluation

Withdrawal. Students who wish to withdraw from the University must initiate action formally through the Admissions and Records Office. Failure to file will result in a failing grade in all courses. Refunds are obtainable only for the first 14 days after the term begins. In order to qualify, the student must withdraw and file a refund request at the Cashier's Office within ten days of the term's beginning. A student withdrawing during the refund period is no longer entitled to receive a refund, the student must withdraw and file for a refund at the Cashier's Office within ten days of the term's beginning.

Unofficial Withdrawal. Students withdrawing unofficially from class or from the University one in which a student stops attending classes without filing official withdrawal forms within the established deadlines.

Veterans unofficially withdrawing will have veteran's allowances immediately suspended and will be subject to full repayment of allowances received after date of official withdrawal.

Educational Leave of Absence. Students are permitted to take a total of two semesters of leave during their matriculation at San Diego State University. However, to extend that leave for an additional semester, a separate application must be filed prior to the deadline for submitting leaves as outlined in the Academic Calendar.

A student must file application for leave at the Admissions and Records Office. Requests for leave of absence of three or more semesters must be made to the Office of the Vice President for Academic Affairs. Automatic approval for leaves of absence will not be granted to students who have been admitted but who have been academically disqualified at the end of their last semester of attendance. To be eligible for leave an undergraduate must be eligible to return as an undergraduate; students qualifying for change in status from undergraduate to graduate are not eligible.

Readmission. A student who withdraws from the University must file application for readmission if a full semester elapses between withdrawal and return. A $35 application fee for readmission is required if the applicant was not regularly enrolled in either of the two semesters immediately preceding the semester for which the application is submitted; or if the student was enrolled at another institution subsequent to the last attendance at San Diego State University. SDSU students in good standing (not academically disqualified) retain their original catalog status if they are absent from the University for no more than one semester. Such students must, however, apply for readmission to SDSU.

Evaluation. An evaluation is summary of college work completed and of requirements to be completed for a bachelor's degree or credential. To be eligible for evaluation, a student must have completed at least 56 units of acceptable college work, and have a declared major. An evaluation will be completed only if official copies of all transfer credits are on file in the Office of Admissions and Records. Only one evaluation will be done for each major. Authorization for more than one evaluation during any one semester or one evaluation in nine weeks of summer session, due to changed circumstances, requires special permission. A student who has earned 56 semester units or more and has not received an evaluation must apply at the Evaluations Office for an official evaluation. The evaluation is made on the regulations in effect at the time the student declares the major, provided continuous enrollment has been maintained, except as otherwise provided in the California Administrative Code, Chapter 5, Section 40401, Election of Regulations. (Further information is given in the section of this catalog on Graduation Requirements.)

After an interval of five years from the time an evaluation is made, courses in education to be applied toward a teaching credential are subject to re-evaluation.

Credit and Study List Limits

A unit or credit hour represents 50 minutes of lecture or recitation combined with two hours of preparation per week throughout one semester of 15 weeks. Two hours of activity (as in physical education) or three hours of laboratory (as in the sciences) are considered equivalent to one hour of lecture.

At registration time, students will not be permitted to enroll for more than 18 units. After registration, units may be added, if desired, by means of the add-drop process, though if students are employed outside of college they are strongly advised to undertake a modest college work attempted. A normal 16-unit load therefore represents a 48-hour week.

Graduation With Honors and Distinction

Graduation with honors is granted to those undergraduate students in each graduating class who achieve high grade point averages. Excellence in recognized at three levels: cum laude (3.50-3.64), magna cum laude (3.65-3.79), and summa cum laude (3.80-4.00).

The grade point average is computed on a minimum of 24 graded units taken in this institution, except that if the grade point average for work at other collegiate institutions is lower, those grades are included in the computation.

Grades for the final semester's work are included in calculation of eligibility for graduation with honors. Students are tentatively designated as eligible for graduation with honors if the grade point average meets required standards at the beginning of the fall semester for mid-year graduates and at the beginning of the spring semester for May and summer session graduates. Notation of cum laude, magna cum laude, or summa cum laude on transcripts and diplomas is based on actual total achievement.

Upon recommendation of the major department, students doing superior work in their major field may be graduated with distinction in that field. To qualify for Distinction in the Major, a student must have a minimum 3.50 grade point average in the major (upper division courses) and must complete the fall semester by the beginning of the fall semester for mid-year graduates and by the end of the fall semester for May and summer session graduates. To be considered for computation of the major grade point average, grades for removal of all other grade changes must be received in the Admissions and Records Office no later than the end of the fifth week of the semester in which the student plans to take the last course of the year.

All changes for summer session graduates must be received by the end of the fifth week of the spring semester prior to graduation.
Scholastic Probation and Disqualification

Undergraduate Students

An undergraduate student will be placed on academic probation if at any time the student's cumulative grade point average in all college work attempted or the student's cumulative grade point average for this institution falls below 2.0.

An undergraduate student on academic probation is subject to academic disqualification:
A. As a lower-division student (less than 60 semester hours of college work completed) if a student falls 15 or more grade points below a 2.0 (C) average on all units attempted or in all units attempted at this campus.
B. As a junior (60 to 89 semester hours of college work completed) if a student falls nine or more grade points below a 2.0 (C) average on all units attempted or in all units attempted at this campus.
C. As a senior (90 semester hours of college work completed) if a student falls six or more grade points below a 2.0 (C) average on all units attempted or in all units attempted at this campus.

An undergraduate student shall be removed from academic probation when his/her cumulative grade point average is 2.0 or higher in all college work attempted and in all work attempted at this University.

A disqualified student may be reinstated when conditions causing the poor performance have been alleviated. Application for reinstatement should be made at the Admissions Office. Any student appealed against to the Admissions Office is subject to the requirements of the General Catalog in effect during the semester of reinstatement.

Administrative Academic Probation

An undergraduate or graduate student may be placed on administrative academic probation by action of appropriate campus officials for any of 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. Repeated failure to progress toward the stated degree or objective or other program objective, if such failure appears to be due to circumstances within the control of the student.
C. Failure to comply after due notice, with an academic requirement or regulation which is tests, failure to complete a required practicum.

Administrative Academic Disqualification

A student who has been placed on administrative academic probation may be disqualified from further attendance if:
A. The student is subject to administrative academic probation for any of the following reasons:
B. The student is subject to administrative academic probation while on administrative academic probation.
C. The student is subject to administrative academic probation while on administrative academic probation.

Student-Athlete Satisfactory Academic Progress Requirement

In order to remain eligible for intercollegiate competition, a student-athlete must be enrolled in an academic program leading to a recognized degree, must be making satisfactory progress toward that degree as established pursuant to the rules of the institution and the NCAA, and must achieve at least the minimum cumulative GPA standards found in the WAC Minimum Cumulative Grade Point Average Requirement Table.

Student Discipline and Grievances

Inappropriate conduct by students or by applicants for admission is subject to discipline on the San Diego State University campus. The Office of Judicial Procedures coordinates the discipline process and establishes standards and procedures in accordance with regulations contained in Article 11, Sections 41301 through 41304 of Title 5, California Administrative Code. These sections are as follows:

41301. Expulsion, Suspension and Probation of Students.

(a) Cheating or plagiarism in connection with an academic program at a campus.
(b) Forgery, alteration or misuse of campus documents, records, or identification, or knowingly furnishing false information to a campus.
(c) Misrepresentation of oneself or of an organization to be an agent of a campus.
(d) Obstruction or disruption, on or off campus property, of the campus educational process, administrative process, or other campus function.
(e) Physical abuse, or off campus property of the person or property of any member of the campus community or of members of his or her family or the threat of such physical abuse.
(f) Theft of, or nonaccidental damage to, campus property, or property in the possession of, or owned by, a member of the campus community.
(g) Unauthorized entry into, unauthorized use of, or misuse of campus property.
(h) On campus property, the sale or knowing possession of dangerous drugs, restricted dangerous drugs, or narcotics as those terms are used in California statutes, except when lawfully prescribed pursuant to a medical or dental care, or when lawfully permitted for the purpose of research, instruction or analysis.
(i) Knowing possession or use of explosives, dangerous chemicals or deadly weapons on campus property or at a campus function without prior authorization of the campus president.
(j) Engaging in lewd, indecent or obscene behavior on campus property or at a campus function.
(k) Abusive behavior directed toward, or harassing, a member of the campus community.
(l) Violation of any order of a campus president, notice of which had been given prior to such violation and during the academic term in which the violation occurs, either by publication in the campus newspaper, or by posting on an official bulletin board designated for this purpose, and which order is not inconsistent with any of the provisions of this Section.

(m) Soliciting or assisting another to do any act which would subject a student to expulsion, suspension or probation pursuant to this Section.
(n) For purposes of this Article, the following terms are defined:
(1) The term "member of the campus community" is defined as meaning California State University Trustees, academic, nonacademic and administrative personnel, Board of Trustees of The California State University, and all campus housing, retail or residence facilities whether operated by a campus or by a campus auxiliary organization.
(3) The term “deadly weapons” includes any instrument or weapon of the kind commonly known as a blackjack, slingshot, billy, sandclub, sandbag, metal knuck-les; any dirk, dagger, switchblade knife, pistol, revolver, or any other firearm; any knife having a blade longer than five inches, any razor with an unguarded blade, and any razor pipe or bar used or intended to be used as a club.

(4) The term “behavior” includes conduct and expression.

(5) The term “hazing” means any method of initiation into a student organization or any pastime or amusement engaged in with regard to such an organization which causes, or is likely to cause, bodily danger or physical or emotional harm to any member of the campus community, but the term “hazing” does not include customary athletic events or other similar contests or activities.

(c) This Section is not adopted pursuant to Education Code Section 8903.

(p) Notwithstanding any amendment or repeal pursuant to the resolution by which any provision of this Article is amended, all acts and omissions occurring prior to that effective date shall be subject to the provisions of this Article as in effect immediately prior to such effective date.

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. In the event that a student who has not reached his or her eighteenth birthday and who is a dependent of his or her parent(s) as defined in Section 152 of the Internal Revenue Code of 1984 is suspended or expelled, the President shall notify his or her parent or guardian of the action by registered mail to the last known address, return receipt requested.

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 the campus from serious disorder or interference with any campus activity.

Plagiarism

This Section is not adopted pursuant to Education Code Section 8903; this Article is amended "II , d .ff. procedures may be obtained from the Ombudsman's Office in Aztec Center.

Student Grievances

If a student believes that a professor's treatment is grossly unfair or that a professor's behavior is clearly unprofessional, he/she may bring his/her complaint to the proper university authorities and official reviewing bodies by following the Procedures for Handling Student Grievances Against Members of the Faculty, adopted by the Faculty Senate. A copy of the procedures may be obtained from the Ombudsman's Office in Aztec Center.

Plagiarism

Plagiarism is formal work publicly misrepresented as original; it is any activity wherein one person knowingly, directly, and for lucre, status, recognition, or any public gain resorts to the published or unpublished work of another in order to represent it as one's own. Work shall be deemed plagiarism: (1) when prior work of another has been demonstrated as the accessible source, (2) when substantial or material parts of the source have been literally or evasively appropriated (substance denoting quantity; matter denoting qualitative format or style); and (3) when the work lacks sufficient or unequivocal citation so as to indicate or imply that the work was neither a copy nor an imitation. This definition comprises oral, written, and crafted pieces. In short, if one purports to present an original piece but copies ideas word for word or by paraphrase, those ideas should be duly noted.

Second, San Diego State University is a publicly assisted institution legislatively empowered to certify competence and accomplishment in general and discrete categories of knowledge. The President and faculty of the University are therefore obliged not only to society at large but to the citizenry of the State of California to guarantee honest and substantive knowledge in those to whom they assign grades and whom they recommend for degrees. Wittingly or willfully to ignore or to allow students' ascription of others' work to themselves is to condone dishonesty, to deny the purpose of formal education, and to fail the public trust.

The objective of university endeavor is to advance humanity by increasing and refining knowledge and is, therefore, served by students who indulge in plagiarism. Accordingly, one must be liable to an appropriate penalty, even severs from the University and in some cases revocation of an advanced degree, should the demonstrated plagiarism clearly call into question one's general competence or accomplishments.
Graduation Requirements

Competency
Upper Division Writing
Major and Minor
American Institutions
Foreign Language
Units
Residence
Grade Point Average
General Education
Graduation Requirements for the Bachelor’s Degree

The requirements in this “Graduation Requirements” section of the catalog are those requirements which the University will make every effort to preserve for students subject to this catalog according to the provisions enumerated below. All other parts of the catalog are subject to change from year to year as University rules, policies, and curricula change. It is the students’ responsibility to keep informed of such changes. Failure to do so will not exempt students from whatever penalties they may incur.

The requirements appearing in this catalog are applicable to students under the following circumstances:

1. Students may remain with the general education requirements in effect during the year in which they entered SDSU, another campus in the CSU system, or a California community college, so long as they have remained in continuous attendance in either the CSU or community college system or have been on approved leave of absence. If students change or declare their majors in subsequent years, however, they must adopt the graduation requirements including the major requirements, of the catalog in effect at the time of such change or declaration. They may continue with the earlier catalog only with regard to general education requirements.

2. At the students’ option, they may change to the catalog in effect in the year in which they graduate. Thus, students graduating in January 1985, May 1985, or in the 1985 summer sessions may adopt this catalog by so indicating on their application for graduation.

Applications for graduation are available in the Evaluations Office (Administration Bldg., Room 127) and are filed in the spring semester of the junior year for mid-year graduates or the fall semester of the senior year for spring and summer graduates. Deadlines by which applications must be received in the Evaluations Office are published each year in the fall semester Class Schedule.

The declaration of a major can occur in either of two ways: (a) by entering it on an Application for Admission-Readmission, or (b) by obtaining and filing a Change or Declaration of Major form at the Evaluations Office (Administration Bldg., Room 127).

I. Competency Requirements: Writing and Mathematics

Competency in standard written English and in basic mathematics is essential to successful study in the university environment. All students pursuing a baccalaureate degree must satisfy the time of entrance or within two semesters thereafter. These competency requirements cannot be satisfied by completion of any courses in English composition or remedial mathematics, those courses on other campuses will be accepted only if the examinations are among those listed below.

No students will be permitted to register in Afro-American Studies 120 or 200, English 100, the upper division writing requirement without having satisfed the writing competency requirement. Statistics course without having satisfied the mathematics competency requirement.

A. Writing Competency Examinations

1. English Placement Test (for most freshmen and some lower division transfers), do not meet certain exemptions take the CSU English Placement Test (EPT). Although

the results of the EPT will not affect admissions eligibility. failure to take the EPT within two semesters of admission will lead to withholding of registration privileges for a third semester.

Students who need not take the EPT are those who meet any one of the following exemptions:

a. Transfer to SDSU with 56 or more transferable semester units or 84 quarter units,

b. Completion of an acceptable college transfer course in English composition of three semester or four quarter units with a grade of C or better,

c. Score of 510 or above on the verbal section of the Scholastic Aptitude Test (SAT),

d. Score of 23 or above on the English Usage section of the American College Test (ACT),

e. Satisfactory scores on the CSU English Equivalency Examination (EEE),

f. Score of 3, 4, or 5 on the English Composition Examination of The College Board Advanced Placement Program,

2. Test of Standard Written English (TSWE) section of the Scholastic Aptitude Test (SAT) (for some freshmen and most transfers)

Students who are exempt from the English Placement Test (EPT) or do not attain a passing score on the EPT, and who have not satisfied the writing competency requirement by any of the methods listed below, may satisfy this requirement either by scoring high enough on the Test of Standard Written English (TSWE) or by passing a course (see “Writing Competency Courses” below).

Students who enter the University with an adequate TSWE score will have satisfied the writing competency requirement if the score has been officially reported to SDSU. The TSWE is given on campus approximately 20 times each semester and several times during the summer (refer to the Class Schedule: Special Tests section for further information refer to the “Special Tests” section at the Class Schedule).

3. English Usage section of the American College Test (ACT) (for some freshmen and transfers)

Students who enter the University with an adequate ACT English score will have satisfied the writing competency requirement if the score has been officially reported to SDSU.

For further information refer to the “Special Tests” section at the Class Schedule.

4. International Students English Placement Test (for all international students regardless of TOEFL score)

All international students should take the International Students English Placement Test (ISePT) to aid them in selection of English language courses. Students who score high enough on the ISePT will have satisfied the writing competency requirement.

For further information contact the International Students Office or the American Language Institute.
5. Other examinations which, with sufficiently high scores, will satisfy the writing competency requirement are the following:
   a. CSU English Equivalency Examination (EEE). (May also grant up to six units of credit.)
   b. English Composition Examination of The College Board Advanced Placement Program. (May also grant up to six units of credit.)
   c. The College Board Achievement Test in English Composition with Essay.
   (Please note that these are the same examinations which, with appropriate scores, provide exemption from the English Placement Test requirement.)

B. Writing Competency Courses

Students who have not satisfied the writing competency requirement by examination or who prefer a course to an examination may take Academic Skills 110 (except that students subject to the English Placement Test must at least attempt the EPT). The final examination in the course is a competency examination. Students who do not score at an adequate level on that examination may advance to Academic Skills 110, which also uses a competency examination as a final examination. A grade of CR (Credit) in Academic Skills 150 will satisfy the writing competency requirement. Credit earned in Academic Skills 110 and 150 is not applicable to the baccalaureate degree.

**MATHEMATICS COMPETENCY**

A. Mathematics Competency Examinations

1. Entry-Level Mathematics Examination (for most entering students).
   The California State University system requires that all entering students who do not meet certain exemptions take the CSU Entry-Level Mathematics Examination (ELM). Although the ELM will not affect admissions eligibility, failure to take the ELM within two semesters of admission will lead to withholding of registration privileges for a third semester.
   Students who need not take the ELM are those who meet any one of the following exemptions:
   a. Completion of an approved General Education mathematics transfer course of three semesters or four quarter units at the level of Intermediate Algebra or above with a grade of C or better.
   b. Score of 530 or above on the SAT Mathematics section.
   c. Score of 23 or above on the ACT Mathematics section.
   d. Score of 3 or above on The College Board Advanced Placement Test in Mathematics, level AB or BC.
   e. Score of 520 or above on The College Board Advanced Placement Test in Mathematics, level AB or BC.
   f. Score of 540 or above on The College Board Advanced Placement Test in Mathematics, level AB or BC.

   A passing score on the ELM satisfies the mathematics competency requirement. Students who do not score high enough on the ELM to satisfy this requirement will be required to take steps to raise their mathematics skills and to repeat the ELM until they pass. Students subject to the ELM will be required to pass the examination before taking a baccalaureate level mathematics or statistics course.
   Information bulletins and registration materials for the ELM will be mailed to all newly admitted students.

2. SDSU Mathematics Competency Test (for some transfers).
   Students who are exempt from the ELM and have not satisfied the mathematics competency requirement by any of the other methods listed below may satisfy this requirement either by passing the SDSU Mathematics Competency Test or by passing SDSU Academic Skills 102 (see "Mathematics Competency Course" below).
   The Mathematics Competency Test is given on campus approximately 25 times each semester and several times during the summer (refer to the Class Schedule "Special Tests" section for times and dates). Students may attempt the Mathematics Competency Test three times; after three unsuccessful attempts, students will be required to prove that they have made a substantial effort to improve their mathematics skills (for example, by completing a community college or adult education course or studying with a tutor) before being allowed a fourth attempt. Students who elect to improve their skills by enrolling in SDSU Academic Skills 102 will automatically be retested.
   For further information refer to the "Special Tests" section of the Class Schedule.

3. Mathematics section of the Scholastic Aptitude Test
   (for some freshmen and transfers).
   Students who enter the University with an adequate SAT Mathematics score will have satisfied the mathematics competency requirement if the score has been officially reported to SDSU.
   For further information refer to the "Special Tests" section of the Class Schedule.

4. Mathematics section of the American College Test (ACT) (for some freshmen and transfers).
   Students who enter the University with an adequate ACT mathematics score will have satisfied the mathematics competency requirement if the score has been officially reported to SDSU.
   For further information refer to the "Special Tests" section of the Class Schedule.

5. SDSU Mathematics Placement Examination (for students required to take trigonometry, calculus, or statistics).
   The Mathematics Placement Examination is required of students before enrollment in any of the following courses: Mathematics 104, 107, 119, 120, 121, 140, 141, 150, 250, Economics 201, Political Science 201, Psychology 270, and Sociology 201.
   The Mathematics Placement Examination is given approximately 25 times each semester and several times during the summer (refer to the Class Schedule "Special Tests" section for times and dates).

6. Other examinations which, with sufficiently high scores, will satisfy the mathematics competency requirement are the following:
   a. The College Board Advanced Placement Test in Mathematics, level AB or BC. (May also grant 6 or 9 units of credit.)
   b. The College Board Mathematics Achievement Test, level 1 or 2.
   c. College Level Examination Program (CLEP) in any of the following: General Mathematics, College Algebra-Trigonometry, Calculus, and Analytical Geometry, and Statistics. (May grant three units of credit for each exam.)
   (Please note that these are the same examinations which, with appropriate scores, provide exemption from the Entry-Level Mathematics Examination requirement.)

B. Mathematics Competency Course

Students who have taken one of the competency examinations but not scored sufficiently high to satisfy the mathematics competency requirement may take Academic Skills 102. Passing the final examination in the course will satisfy the SDSU mathematics requirements. Students subject to the ELM must pass the competency requirement. However, since students subject to the ELM must pass the competency requirements in order to satisfy both the ELM and mathematics competency requirements at once. A grade of CR (Credit) in Academic Skills 102 will satisfy the mathematics competency requirement. Credit earned in Academic Skills 102 is not applicable to the baccalaureate degree.

II. Upper Division Writing Requirement

All students subject to degree requirements of 1981-82 and subsequent general catalogs must fulfill the Upper Division Writing Requirement as mandated by the major and included in each major description. Students whose majors do not specify any particular course or procedure may select from the following options:

1. Demonstrating the required proficiency by passing the University Upper Division Writing Examination.
Major and Minor Requirements

A. Preparation for the Major. Every major requires a set of introductory and/or skills courses designed to prepare the student for upper division study in that field. Courses taken for this purpose can also be used to satisfy general education requirements.

B. Foreign Language. Students whose majors lead to the Bachelor of Arts degree in Liberal Arts and Sciences must complete a foreign language requirement. See item V listed below.

C. Major. Completion of a departmental or an interdisciplinary major is required. A major is an area of specialized study which provides the student with extensive knowledge of the subject matter and its organizing concepts. It consists of 24 or more upper division units for the Bachelor of Arts, Bachelor of Music, and Bachelor of Vocational Education degrees, and of 36 or more units for the Bachelor of Science degree. At least half of the major, however, in no case shall a student be allowed to complete fewer than 12 units in the major. Units received through SDSU extension courses, with the exception of those offered during Summer Sessions and Winter Session, are not applicable to this requirement. A summary list of all majors appears at the close of this chapter; the full statement of requirements for each major can be found through the Index. Courses taken in the major are used to meet requirements in a minor. A maximum of three major units can be used for General Education only if the minor units are used to satisfy the requirements in both the major and the minor.

D. Minor. Completion of a minor is necessary if required by the major; the decision is often an integrated and coherent pattern of course work, combining lower and upper division courses that are appropriate to the various disciplines. The minor chapter lists all minors that appear at the close of this index. Courses in the minor need not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements.

Graduation Requirements

IV. American Institutions Requirement
The American Institutions requirement can be satisfied in any of four ways:

A. Examinations: By passing three examinations administered by the SDSU Test Office, one in American History, Institutions and Ideals (2 hours), a second in United States Constitution (90 minutes), and a third in California Government (60 minutes).

B. Courses: By passing any one of the following pairs of courses:

- Afro-American Studies 170A-170B
- History 110A-110B
- History 115A-115B
- History 310A-310B
- History 410A-410B
- History 547A-547B
- Mexican-American Studies 120A-120B
- Mexican-American Studies 141A-141B

C. Examinations and courses: By passing any one or two of the aforementioned examinations AND course work appropriate to the remaining area or areas. Courses applicable to the major are listed below.

1. American History, Institutions and Ideals: All pairs of courses listed in IV.B above and History 537A, 537B, 544A, 544B, 545A-545B.


D. Transfer credit: By providing evidence on a transcript or other official document from an accredited California university, liberal arts college, or community college that the requirement as outlined in Title 5, California Administrative Code, Article 5, Section 40404 has been satisfied. No partial certification of American Institutions or certification based on high school work can be accepted. Three units of transfer credit for a college-level course used to satisfy American Institutions may be used for General Education only if the course is equivalent to an approved SDSU American Institutions course listed above.

V. Foreign Language Requirement

A.B. degree, Liberal Arts and Sciences only

The Bachelor of Arts degree in Liberal Arts and Sciences requires competency (equivalent to that which is normally attained after the first three semesters of college study) in one foreign or American Indian language as part of the preparation for the major. Such competency may be demonstrated by:

A. Successfully completing three college semesters of one foreign language;

B. Successfully completing the fourth level of high school courses in one foreign language;

C. Successfully completing a proficiency examination in one foreign language.

Any combination of the preceding is also acceptable. However, conversation courses are not counted toward satisfying this requirement.

Secondary school language courses can be used as follows:

A. The first two years of a high school level language counts as the equivalent of the first semester of a college level course, although students with fewer than three years of high school level language may complete the first semester college course for graduation credit.

B. The first three years of a high school level language course is the equivalent of the first two college semesters, although students with fewer than four years of high school level language may complete the second college semester course for graduation credit.

Students who have completed three years of foreign language in high school will not receive credit for the first semester college course unless at least five years separate the two courses. Students who have completed four years of foreign language in high school will not receive credit for the second semester college course unless at least five years separate the two courses.
VI. Unit Requirements

A. Total unit requirement. The total number of units necessary for a bachelor's degree exclusive of Academic Skills 102, 103, 110, 111, 131, 132, 133, 141, 145 and English 125 is as follows:

1. For the Bachelor of Arts degree in Applied Arts and Sciences ........................................... 124
2. For the Bachelor of Arts degree in Liberal Arts and Sciences ........................................... 124
3. For the Bachelor of Science degree .................................................................................. 128
4. For the Bachelor of Science degree in Geological Sciences ........................................... 132
5. For the Bachelor of Science degree in Engineering ......................................................... 132
6. For the Bachelor of Science degree in Music .................................................................. 132
7. For the Bachelor of Science degree in Vocational Education ........................................ 132

The degree which applies to a particular student is determined by the student's choice of major. Each student should therefore consult the statement of his or her major to establish the applicable degree. The full statement of each major can be found by consulting the Index.

* Applies to all options except General Geology and Palaeontology which require 128 units.

B. Upper division unit requirement. The total number of upper division units necessary for a bachelor's degree is as follows:

1. For the Bachelor of Arts degree in Applied Arts and Sciences ........................................... 40
2. For the Bachelor of Arts degree in Liberal Arts and Sciences ........................................... 45
3. For the Bachelor of Science degree .................................................................................. 45
4. For the Bachelor of Music degree ..................................................................................... 47-51
5. For the Bachelor of Vocational Education degree ........................................................... 40

Courses offering upper division credit are those numbered 300 through 599. All units from upper division courses are applicable to the upper division unit requirement, including units from courses in the major and the minor, and from courses used to satisfy the American institutions and the general education requirements.

C. Special unit totals. The maximum number of special units accepted for a bachelor's degree is as follows:

1. From transferable community and junior college courses ............................................... 70
2. From credit by examination ............................................................................................... 30
3. From extension and correspondence courses ................................................................... 24
4. From credit/no credit courses ......................................................................................... 24
5. From topics courses numbered 296, 496, 596 ................................................................. 24
6. From General Studies courses numbered 200 and 400 ................................................. 6
7. From Academic Skills 102, 103, 110, 111, 131, 132, 133, 141, 150, and English 125 ..... 2
8. From Academic Skills 143, 151 and 296 ................................................................. 0
9. From Aerospace Studies, Military Science and Naval Science courses ......................... 3

D. Units in one department.

1. Bachelor of Arts degree in Liberal Arts and Sciences. The maximum number of units in any one department, lower and upper division combined, which can be applied toward the Bachelor of Arts degree in Liberal Arts and Sciences is 48, except in journalism. Students majoring in journalism may not accumulate more than 30 units of credit in journalism courses.
2. Bachelor of Music degree. The maximum number of units in upper division music courses acceptable toward the Bachelor of Music degree is 70.
3. Bachelor of Science degree in Business Administration. The minimum number of units in business administration and economics courses necessary for a Bachelor of Science degree in any of the seven business majors is 52 (40 percent of 128 units). In addition, the minimum number of units from departments outside of business administration and economics is likewise 52 (40 percent of 128 units).

VII. Residence Requirement

A minimum of 30 units must be earned in courses taken at San Diego State University. Twenty-four of those units must be earned in upper division courses. At least one-half of the upper division units required for the major must be taken at this institution unless specifically waived by the department. However, in no case shall a student be allowed to complete fewer than twelve residence units in the major. Courses taken in extension (except for Summer Sessions and Winter Session) and units earned through credit-by-examination may not be used to fulfill these requirements. In addition, students subject to the General Education requirements listed in this catalog must complete nine units of General Education in residence.

VIII. Grade Point Average Requirements

Three averages, each 2.0 or higher, are required for graduation:

A. An average based on all courses attempted at SDSU.
B. An average based on all courses attempted at SDSU and transferable courses at other universities, liberal arts colleges, and community colleges.
C. An average based on all upper division courses attempted in the major.

Information on the computation of averages can be found in the chapter General Regulations under these headings: Grade Point Average, Grades, Incomplete Grade, and Repeated Course.

IX. General Education Requirements

As an important part of education, undergraduate students spend approximately one-third of their college years studying in the General Education program. Course work in General Education is intended to give enriching perspective to students' overall academic programs, to complement their mastery of a more specialized subject area, and to equip them for lifelong understanding and development of themselves as integrated physical and psychological entities. The program consists of a minimum of 49 semester units, distributed as indicated below. The major components—Communication and Analytical Reasoning, Foundations, and Explorationsshould be taken sequentially so that mastery of skills may prepare students for understanding the academic disciplines of the University, and so that introduction to academic disciplines may prepare them for more specialized or interdisciplinary study.

* Engineering and Nursing majors should refer to the Courses and Curricula section of the General Catalog for a listing of General Education requirements.
The General Education program at San Diego State University is evolutionary. A standing committee of faculty and students reviews the program continually and encourages the development of new courses, concepts, and learning experiences. The program has four major objectives: (1) to develop in students intellectual capabilities necessary to the enterprise of learning; (2) to introduce students to the modes of thought characteristic of diverse academic disciplines; (3) to help them understand the conditions and forces which shape them as human beings and influence their lives; and (4) to help them apply critical and informed judgments to the achievements of their own and other cultures.

**COURSE WORK EXCLUDED FROM GENERAL EDUCATION**

The educational objectives of courses in General Education are not characteristic of other types of course offerings in the curriculum. Therefore, certain types of courses are not acceptable for General Education credit.

Types of courses that do **not** count for General Education credit include:

1. Course work in a major (upper division courses).
2. Mathematics 104 and 107, computer programming courses, and all Academic Skills courses.
3. Course work in excess of 12 units in one department or academic unit.
4. Courses numbered 296, 496, or 596 (topics).
5. Courses numbered 299, 499 (special study).

**NOTE:** However, course work completed in a minor or in preparation for the major may be used to satisfy General Education.

**CALIFORNIA COMMUNITY COLLEGE AND CSU CERTIFIED TRANSFER STUDENTS**

Transfer students who are certified by their previous institutions to have completed 39 state-mandated General Education units as outlined in the California Administrative Code, Title 5, will be required to complete an additional nine units necessary to comply with the following Title 5 provisions: At least nine units shall be earned at the campus granting the degree.

It is expected that almost all students will take their remaining nine units at the upper division level in order to fulfill the required nine-unit upper division General Education requirement. Up to two upper division courses may be counted from a single area (Natural Sciences, Social and Behavioral Sciences, Humanities) of Explorations: Part III of General Education. Only one course may be counted from American Institutions.

Those transfer students who have completed upper division General Education courses or lower division General Education requirement (within the limitations described in the above paragraph), such students may then select any course(s) approved for General Education to complete the nine units which must be taken at the campus granting the degree.

This provision also applies to students who were certified as having completed 40 units of General Education under earlier requirements and who have not maintained continuous attendance.

**SPECIFIC REQUIREMENTS**

Students will complete a minimum of 49 units in General Education, to include a minimum of nine upper division units which shall be taken no sooner than the term in which the student achieves upper division status. At least nine units of General Education must be earned at San Diego State University. No more than 12 units may be used for General Education credit from any one department or academic unit.

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1. A maximum of three upper division units in excess of 24 for the B.A. degree and 36 for the B.S. degree required for the major or taught outside the major department may be used to satisfy requirements both for General Education and the major if such courses have been approved for General Education.

**I. COMMUNICATION AND ANALYTICAL REASONING**

Courses taken to satisfy the Communication and Analytical Reasoning Section of General Education may not be taken for credit/no credit.

Included in Communication and Analytical Reasoning are courses in written and oral communication skills in English and in the analytical reasoning skills developed in Mathematics, statistics, and logic. Communication and Analytical Reasoning courses deal with the communicative, rational, and computational skills required within the context of the University at large; they are not intended to introduce students to the peculiarities of disciplines (i.e., specialized subjects of inquiry and unique methodologies). These capabilities should be achieved by students during their first year of college.

**Course Work in Communication and Analytical Reasoning.** A minimum of twelve units distributed as follows.

A. **Written Communication.** Six units to include one course each from areas 1 and 2.

1. **Composition**
   - Afro-American Studies 120, Composition (3)
   - English 100, College Composition (3)
   - Linguistics 100, English Composition for International Students (3)
   - Mexican-American Studies 111B, Written Communication (3)

2. **Intermediate Composition**
   - Afro-American Studies 200, Intermediate Expository Writing and Research Fundamentals (3)
   - English 200, Intermediate Composition (3)
   - English 280, Introduction to Creative Writing (3)
   - Linguistics 200, Advanced English for International Students (3)

B. **Oral Communication.** Three units from the following:

1. **Oral Communication**
   - Afro-American Studies 140, Oral Communication (3)
   - Mexican-American Studies 111A, Oral Communication (3)
   - Speech Communication 103, Oral Communication (3)

C. **Logic, Mathematics, Statistics.** Three units from one of the following areas.

1. **Logic**
   - Philosophy 120, Logic (3)

2. **Mathematics**
   - Mathematics 118, or higher-numbered course, excluding computer programming courses

3. **Statistics**
   - Economics 201, Statistical Methods (3)
   - Mathematics 119, Elementary Statistics for Business (3)
   - Mathematics 250, Basic Statistical Methods (3)
   - Political Science 201, Elementary Statistics for Political Science (3)
   - Psychology 270, Statistical Methods in Psychology (3)
   - Sociology 201, Elementary Social Statistics (3)

1. Students completing more than one statistics course will be awarded a total of four units of credit, three of which will be applicable to General Education.

**II. FOUNDATIONS**

Foundations courses follow and build upon Communication and Analytical Reasoning courses and are offered by individual departments and interdisciplinary areas in the Natural Sciences, Social and Behavioral Sciences, and Humanities. Foundations courses introduce students to various disciplines, i.e., subject matters and the diverse conceptual frameworks by which scholars in different fields approach these subjects. The purpose of this section is to provide students with such modes of thought so as to allow for their application to various human concerns and experiences.
Course Work in Foundations. A minimum of 22 units distributed as follows. No more than seven units taken in any one department or program may be counted for credit in Foundations and Explorations.

A. Natural Sciences. Seven units to include one course each from areas 1 and 2 and a one-unit (three-hour) laboratory.

1. Life Sciences
   + Anthropology 101. Human Bio-Cultural Origins (3)
   Biology 100. General Biology (3)
   Biology 100L. General Biology Laboratory (1)
   Botany 100. Plants and Man (3)
   Botany 100L. Plants and Man Laboratory (1)
   Botany 200. Agricultural Botany of the Imperial Valley with Laboratory (4)
   (Offered at IVC only)
   Microbiology 110. Microbiology and Man (3)
   Microbiology 110L. Microbiology and Man Laboratory (1)
   Natural Science 100B. Energy in Nature with Laboratory (4)
   Zoology 100. Evolution and Diversity of Animals Laboratory (1)

2. Physical Sciences
   Astronomy 101. Principles of Astronomy (3)
   Astronomy 109. Astronomy Laboratory (1)
   Chemistry 100. Introduction to General Chemistry with Laboratory (4)
   Chemistry 110. Chemistry and Life (3)
   + Geography 101. Introduction to Physical Geography (3)
   Geography 101L. Physical Geography Laboratory (1)
   + Geography 103. Introduction to Meteorology (3)
   Geography 103L. Introduction to Meteorology Laboratory (1)
   Geological Sciences 100. General Geology (3)
   Geological Sciences 101. General Geology Laboratory (1)
   Natural Science 102. Physical Science Laboratory (4)
   Natural Science 103. Laboratory Exercises in Physical Science (2)
   Natural Science 110A. Energy in Nature with Laboratory (4)
   Physics 103. Physics for Poets (3)
   Physics 103L. Physics for Poets Laboratory (1)
   Physics 107. Introductory Physics with Laboratory (4)
   Physics 115. Elementary Physics with Laboratory (4)

3. Special Provision for Majors in the Sciences and Related Fields.
   a. Where course work in astronomy, biology, botany, chemistry, geological sciences, microbiology, physics, or zoology is required (or listed as a recommended course in the catalog) in preparation for the major, a student may substitute those courses for courses listed in Sections II. A above and III. A below.
   b. If a student adopts the above provision and later changes his or her major to a field which does not require course work in these disciplines, the student may nevertheless receive General Education credit for courses taken in those disciplines.
   c. Undeclared majors who take non-General Education science courses in Section II. A and III. A, in anticipation of declaring a major which requires such course work, are included in a. and b. above.

B. Social and Behavioral Sciences. Six units to include courses from two departments.
   Anthropology 102. Introduction to Cultural Anthropology (3)
   Economics 100. Contemporary Economic Problems (3)
   Economics 101. Principles of Economics (3)
   Economics 102. Principles of Economics (3)
   Geography 102. Introduction to Cultural Geography (3)
   Linguistics 101. Introductory Linguistics (3)

+ Only one of these three courses may be taken for General Education credit.

C. Humanities. Nine units to include courses from three of the four areas listed below.

1. Literature
   Comparative Literature 270A. World Literature (3)
   Comparative Literature 270B. World Literature (3)
   English 220. Introduction to Literature (3)

2. Art, Classics, Drama, Humanities, and Music
   Art 157. Introduction to Art (3)
   Art 258. Appreciation and History of Art (3)
   Art 259. Appreciation and History of Art (3)
   Classics 140. The Heritage of Greece and Rome (3)
   Drama 105. Introduction to the Theatre (3)
   Drama 120. Dramatic Heritage (3)
   Humanities 101. Introduction to Humanities (3)
   Humanities 102A. Introduction to European Heritage (3)
   Humanities 102B. Introduction to European Heritage (3)
   Humanities 130. The Jewish Heritage I (3)
   Humanities 140. Mythology (3)
   Music 151. Introduction to Music (3)

3. History
   History 105. Western Civilization (3)
   History 106. Western Civilization (3)

4. Philosophy, Religious Studies
   Philosophy 101. Introduction to Philosophy: Values (3)
   Philosophy 102. Introduction to Philosophy: Knowledge and Reality (3)
   Philosophy 103. Historical Introduction to Philosophy (3)
   Religious Studies 101. World Religions (3)

III. EXPLORATIONS

General Education is not only a selection of disciplinary skills, introductions, and surveys. It also includes more detailed courses, for the most part upper division, which allow more concentrated or thematic study. This section is called Explorations. There are in Explorations four areas of study—Natural Sciences, Social and Behavioral Sciences, Humanities, and American Institutions.

Course Work in Explorations. A minimum of 15 units, of which at least nine units must be upper division taken after achieving upper division status and at least one course must be cross-cultural (indicated by *), distributed as follows:

One course from area A.
One course from area B.
Two courses from area C.

The fifth course may be selected from among those listed in areas B or C, or from American Institutions courses listed under D. No more than seven units taken in any one department or program may be counted for credit in Foundations and Explorations.

A. Natural Sciences. Any course, excluding laboratories, listed in II. A above and as follows:
   Astronomy 301. Cosmology and Gravitational Collapse (3)
   Biology 130. Ecosystems and Man (3)
   Biology 145. Introduction to Heredity (3)
   Biology 200. Natural History of Plants and Animals (3)
   Biology 310. Biology of Sex (3)

% Students may not substitute History 305A for 105
$ Students may not substitute History 305B for 106
### Graduation Requirements

**132 / Graduation Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Biology 350: Human Heredity</td>
<td>(3)</td>
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<tr>
<td>Biology 351: History of Biology</td>
<td>(3)</td>
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<tr>
<td>Biology 362: Principles of Human Physiology</td>
<td>(3)</td>
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<tr>
<td>Biology 380: Evolution</td>
<td>(3)</td>
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<tr>
<td>Engineering 150: Control of the Human Environment</td>
<td>(3)</td>
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<tr>
<td>Geological Sciences 301: Geology of National Parks and Monuments</td>
<td>(3)</td>
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<tr>
<td>Geology 305: Principles of Geology</td>
<td>(3)</td>
</tr>
<tr>
<td>Mathematics 142: Introductory Matrix Algebra</td>
<td>(3)</td>
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<tr>
<td>Mathematics 231: Cultural Patterns and Black Identity</td>
<td>(3)</td>
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<tr>
<td>Microbiology 305: Microbes: The Key to the Future</td>
<td>(3)</td>
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<td>Microbiology 360: Microorganisms in Human History</td>
<td>(2)</td>
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<tr>
<td>Natural Science 305: Modern Physical Science</td>
<td>(3)</td>
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<tr>
<td>Natural Science 315: History of Science I</td>
<td>(3)</td>
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<tr>
<td>Natural Science 316: History of Science II</td>
<td>(3)</td>
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<tr>
<td>Natural Science 317: Development of Scientific Thought</td>
<td>(3)</td>
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<tr>
<td>Natural Science 333: Technology and Human Values</td>
<td>(3)</td>
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<td>Natural Science 431: The Origins of Life</td>
<td>(3)</td>
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<tr>
<td>Oceanography 320: The Oceans</td>
<td>(3)</td>
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<tr>
<td>Physics 301: Energy and Conservation</td>
<td>(3)</td>
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<tr>
<td>Zoology 308: The Human Body</td>
<td>(3)</td>
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<tr>
<td>Zoology 308L: The Human Body Laboratory</td>
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<td>Zoology 314: Natural History of the Vertebrates</td>
<td>(3)</td>
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<td>Zoology 330: Life in the Sea</td>
<td>(3)</td>
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<tr>
<td>Zoology 340: Sociology and Human Values</td>
<td>(3)</td>
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<tr>
<td>Anthropology 350: World Ethnography</td>
<td>(3)</td>
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<tr>
<td>Anthropology 410: Language in Culture</td>
<td>(3)</td>
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<td>Anthropology 428: Ecological Anthropology</td>
<td>(3)</td>
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<tr>
<td>Anthropology 432: Principles of Personality in Culture</td>
<td>(3)</td>
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<tr>
<td>Anthropology 442: Cultures of South America</td>
<td>(3)</td>
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<td>Anthropology 445: Ethnology of North America</td>
<td>(3)</td>
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<td>Anthropology 448: Cultures of Oceania</td>
<td>(3)</td>
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<td>Anthropology 452: Cultures of Sub-Saharan Africa</td>
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<td>Anthropology 452: Cultures of India</td>
<td>(3)</td>
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<tr>
<td>Anthropology 452: Japanese Society</td>
<td>(3)</td>
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<tr>
<td>Economics 330: Comparative Economic Systems</td>
<td>(3)</td>
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<tr>
<td>Economics 454: Economic Problems of Latin America</td>
<td>(3)</td>
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<tr>
<td>Economics 455: Economic Problems of South and East Asia</td>
<td>(3)</td>
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<tr>
<td>Economics 489: Population and Economic Growth</td>
<td>(3)</td>
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<tr>
<td>Geology 312A: Culture Worlds</td>
<td>(3)</td>
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<tr>
<td>Geology 312B: Culture Worlds</td>
<td>(3)</td>
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<tr>
<td>Geography 312: Culture Worlds</td>
<td>(3)</td>
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<tr>
<td>Geography 321: United States</td>
<td>(3)</td>
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<tr>
<td>Geography 323: Middle America</td>
<td>(3)</td>
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<tr>
<td>Geography 324: South America</td>
<td>(3)</td>
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<tr>
<td>Geography 331: Monsoon Asia</td>
<td>(3)</td>
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<tr>
<td>Geography 335: The Middle East and North Africa</td>
<td>(3)</td>
</tr>
</tbody>
</table>

**B. Social and Behavioral Sciences.** Any course listed in II. B above and as follows.
- Afro-American Studies 102: Afro-American Literature (3)
- Afro-American Studies 231: Cultural Patterns and Black Identity (3)
- Afro-American Studies 232: Social Analysis from a Black Perspective (3)
- Afro-American Studies 445: Ethnicity and Social Psychology (3)
- American Indian Studies 110: American Indian Heritage (3)
- American Indian Studies 320: American Indians in Contemporary Society (3)
- Anthropology 350: World Ethnography (3)
- Anthropology 410: Language in Culture (3)
- Anthropology 428: Ecological Anthropology (3)
- Anthropology 432: Principles of Personality in Culture (3)
- Anthropology 442: Cultures of South America (3)
- Anthropology 445: Ethnology of North America (3)
- Anthropology 448: Cultures of Oceania (3)
- Anthropology 449: Cultures of Sub-Saharan Africa (3)
- Anthropology 450: Cultures of India (3)
- Anthropology 452: Japanese Society (3)
- Economics 330: Comparative Economic Systems (3)
- Economics 454: Economic Problems of Latin America (3)
- Economics 455: Economic Problems of South and East Asia (3)
- Economics 489: Population and Economic Growth (3)
- General Studies 210: Our Global Future. Values for Survival (3)
- Geography 312A: Culture Worlds (3)
- Geography 312B: Culture Worlds (3)
- Geography 321: United States (3)
- Geography 323: Middle America (3)
- Geography 324: South America (3)
- Geography 331: Monsoon Asia (3)
- Geography 335: The Middle East and North Africa (3)
- Anthropology 350: World Ethnography (3)
- Anthropology 410: Language in Culture (3)
- Anthropology 428: Ecological Anthropology (3)
- Anthropology 432: Principles of Personality in Culture (3)
- Anthropology 442: Cultures of South America (3)
- Anthropology 445: Ethnology of North America (3)
- Anthropology 448: Cultures of Oceania (3)
- Anthropology 449: Cultures of Sub-Saharan Africa (3)
- Anthropology 450: Cultures of India (3)
- Anthropology 452: Japanese Society (3)
- Economics 330: Comparative Economic Systems (3)
- Economics 454: Economic Problems of Latin America (3)
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- Economics 489: Population and Economic Growth (3)
- General Studies 210: Our Global Future. Values for Survival (3)
- Geography 312A: Culture Worlds (3)
- Geography 312B: Culture Worlds (3)
- Geography 321: United States (3)
- Geography 323: Middle America (3)
- Geography 324: South America (3)
- Geography 331: Monsoon Asia (3)
- Geography 335: The Middle East and North Africa (3)

**C. Humanities.** Any two courses listed in II. C above and as follows.
- Afro-American Studies 180: Afro-American Music (3)
- Afro-American Studies 280: Introduction to Afro-American Literature (3)
- Afro-American Studies 460: Black Images in Western Literature (3)
- Afro-American Studies 470: Comparative History: Afro-American and African Heritage (3)
- American Indian Studies 200: American Indian Literature (3)
- American Indian Studies 255: American Indian Music (3)
- American Indian Studies 430: African American Poetry and Fiction (3)
- American Indian Studies 440: American Indian History (3)
- American Indian Studies 470: Roots of Indian Tradition (3)

* Cross-cultural course
### Graduation Requirements

#### Comparative Literature
- 405. The Bible as Literature (3) [Same course as English 405.]
- 430. Asian Literature (3)
- 440. African Literature (3)
- 445. Modern Latin American Literature (3)
- 470. Folk Literature (3) (Maximum GE credit 3 units)

#### Classics
- 101G. Elementary Greek I (5)
- 101L. Elementary Latin I (5)
- 202L. Elementary Latin II (5)
- 202G. Elementary Latin III (5)
- 302G. Elementary Latin IV (5)
- 310. Greek and Roman Mythology (3)
- 320. Classical Literature (3)
- 330. Classical Drama (3)
- 340. Classical Civilization (3)

#### Comparative Literature
- 405. The Bible as Literature (3) [Same course as English 405.]

#### Drama
- 460A. History of the Theatre (3)
- 460B. History of the Theatre (3)

#### English
- 301. The Psychological Novel (3)
- 302. Introducing Shakespeare (3)
- 405. The Bible as Literature (3) [Same course as Comparative Literature 405.]
- 494. Modern American Fiction (3)

#### French
- 100A. Elementary (5)
- 100B. Elementary (5)
- 200B. Reading French (3)
- 200C. Writing French (3)
- 200D. The Grammar of Spoken French (3)
- 301. Advanced Grammar and Composition (3)
- 302. Advanced Grammar and Composition (3)
- 305A. Survey of French Literature (3)
- 421. French Civilization (3)

#### German
- 101. First Course in German (4½)
- 102. Second Course in German (4½)

#### Language requirement for the major and not in violation of high school course repeats may be used to satisfy General Education in the Explorations component.

#### History
- 100. World History (3)
- 101. World History (3)
- 120. Introduction to Asian Civilizations (3)
- 121. Asian Civilizations in Modern Times (3)
- 124. Primitive Religion (3)
- 200A. Intermediate Grammar and Composition (3)
- 200B. Reading and Speaking Italian (3)
- 301. Advanced Oral and Written Composition (3)
- 305A. Italian Literature (3)
- 305B. Italian Literature (3)
- 101. Elementary (4)
- 202. Elementary (4)
- 201. Intermediate (4)
- 100. World History (3)
- 101. World History (3)
- 305A. The Sources of Civilization in the West (3)
- 305B. The Sources of Civilization in the West (3)
- 407A. Modern Europe (3)
- 407B. Modern Europe (3)
- 415A. Latin America (3)
- 415B. Latin America (3)
- 420. Asia's Dynamic Traditions (3)
- 421. Asia's Emerging Nations (3)
- 473A. Middle Eastern History from the Rise of Islam to the Present (600-1600 AD.) (3)
- 473B. Middle Eastern History from the Rise of Islam to the Present (1600-present) (3)
- 475A. Africa (3)
- 475B. Africa (3)
- 157. Arab-Islamic Culture and Civilization (3)
- 158. African Culture and Civilization (3)
- 401A. The Cultural Heritage of Europe I (3)
- 401B. The Cultural Heritage of Europe II (3)
- 402A. The Cultural Heritage of Europe III (3)
- 402B. The Cultural Heritage of Europe IV (3)
- 100A. Elementary (5)
- 100B. Elementary (5)
- 200A. Intermediate Grammar and Composition (3)
- 200B. Reading and Speaking Italian (3)
- 301. Advanced Oral and Written Composition (3)
- 305A. Italian Literature (3)
- 305B. Italian Literature (3)
- 101. Elementary (4)
- 202. Elementary (4)
- 303. Readings in Japanese (4)
- 304. Readings in Japanese (4)
- 410. History of English (3)
- 335. Mexican-American Literature (3)
- 350A. Chicano History (3)
- 350B. Chicano History (3)
- 376. Mexican-American Literature (3)
- 380. Chicano Folklore (3)

#### Language graduation requirement for the major and not in violation of high school course repeats may be used to satisfy General Education in the Explorations component.
Music 345. Music in Contemporary Life (3)
Music 351A. Musical Masterpieces of the Eighteenth and Nineteenth Centuries (3)
Music 351B. Musical Masterpieces of the Twentieth Century (3)
Music 351C. Masterpieces of Grand Opera (3)
Music 351D. Jazz History and Appreciation (3)
Philosophy 301. History of Philosophy (3)
Philosophy 310. Philosophy and Human Nature (3)
Philosophy 329. Social Ethics (3)
Philosophy 334. Philosophy of Literature (3)
* Philosophy 350. Philosophical Aspects of Buddhist Thought (3)
* Philosophy 351. Chinese Philosophy (3)
Portuguese 101. Elementary/Intensive (5)
Portuguese 211. Conversation and Grammar Review (3)
Portuguese 212. Conversation and Grammar Review (3)
Portuguese 301. Advanced Oral and Written Composition (3)
Portuguese 302. Advanced Oral and Written Composition (3)
Religious Studies 301. Hebrew Scriptures (3)
Religious Studies 318. Modern Religious Thought in the West (3)
* Religious Studies 340. Islam (3)
Religious Studies 350. Dynamics of Religious Experience (3)
Religious Studies 353. The Human Dimension of Religion and Psychology (3)
Religious Studies 354. Religion and Society (3)
Religious Studies 363. Religion and the Sciences (3)
* Religious Studies 401. Religions of India (3)
* Religious Studies 403. Religions of the Far East (3)
Russian 101. First Course in Russian (4½)
† Russian 102. Second Course in Russian (4½)
‡ Russian 201. Third Course in Russian (4)
‡ Russian 202. Fourth Course in Russian (4)
Russian 211. Conversation (2)
Russian 212. Conversation (2)
Russian 301. Advanced Grammar and Composition (3)
Russian 302. Advanced Grammar and Composition (3)
Russian 305A. Survey of Russian Literature (3)
Russian 305B. Survey of Russian Literature (3)
† Spanish 101. Elementary (4½)
† Spanish 102. Elementary (4½)
‡ Spanish 201. Elementary (4½)
‡ Spanish 202. Intermediate (4)
§ Spanish 211. Intermediate Conversation and Writing (2)
§ Spanish 212. Intermediate Conversation and Writing (2)
§ Spanish 301. Advanced Oral and Written Composition (3)
§ Spanish 302. Advanced Oral and Written Composition (3)
§ Spanish 303. Advanced Composition and Style (3)
§ Spanish 305A. Survey Course in Spanish Literature (3)
§ Spanish 305B. Survey Course in Spanish Literature (3)
§ Spanish 306A. Survey of Spanish-American Literature (3)
§ Spanish 306B. Survey of Spanish-American Literature (3)
§ Spanish 440. Spanish Civilization (3)

Spanish 441. Spanish-American Civilization (3)
Spanish 442. Mexican Civilization (3)
Telecommunications and Film 363. International Cinema (3)
* Women's Studies 205. Women in Western Culture (3)
* Women's Studies 340. Women in Modern History (3)
* Women's Studies 352. Women in Literature (3)
* Women's Studies 453. Women Writers (3)

D. American Institutions. No more than three units of American Institutions course work may be counted for General Education, and only if they are also being used to satisfy the American Institutions graduation requirement. The student should consult the American Institutions Requirement in the General Catalog for other ways of satisfying the American Institutions requirement.

Afro-American Studies 170A-170B
History 110A-110B
History 110B-110C
History 310A-310B
History 410A-410B
History 547A-547B
Mexican-American Studies 120A-120B
Mexican-American Studies 141A-141B

* Cross-cultural course.

Application for Graduation

Graduation is not automatic on the completion of requirements. Students who intend to graduate must take the initiative. When they believe that they are eligible, they should file an application with the Evaluations Office, Administration Building. The Class Schedule each semester specifies the exact date. An application fee of $19.00, which is nonrefundable, is required. After the degree is granted no changes can be made in the undergraduate record.

Election of Regulations for Graduation

Undergraduate students remaining in continuous attendance in regular sessions and continuing on the same curriculum in any campus of The California State University or in any of the California community colleges may, for purposes of meeting graduation requirements, elect to meet the graduation requirements in effect at San Diego State University either at the time of their entering the curriculum or at the time of their graduation therefrom, except that substitutions for discontinued courses may be authorized or required by the proper authorities.

Commencement

Commencement exercises are held once a year at the end of the spring semester for students who were graduated at mid-year, those graduating at the end of the spring semester, and undergraduate students who expect to complete requirements for graduation in the summer session. The President of the University, by the authority of the Trustees and on recommendation of the faculty, awards the degrees. Brochures giving details regarding the exercises are mailed to prospective participants in early May.
Curricula Summary
### Summary of Curricula Offered

<table>
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<tr>
<th>Majors</th>
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<th>Liberal Arts and Sciences</th>
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### Summary of Curricula Offered (cont.)

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<td>Zoology</td>
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**Special Curricula**

### Preprofessional Curricula

- Aerospace studies (A.F.R.O.T.C.)
- Military science (R.O.T.C.)
- Naval science (N.R.O.T.C.)

### Medical Technology

- Military Curricula
- Preprofessional
- Prelegal
- Premedical
- Preveterinary

### Certificate (nondegree) Programs

(See following page for listing of certificate programs.)
### Certificate (nondegree) Programs

- Certificate in applied linguistics and English as a second language (ESL)
- Certificate in bilingual (Spanish) special education
- Certificate in business administration (Imperial Valley campus only)
- Certificate in cartography
- Certificate in children's literature
- Certificate in human services paraprofessional
- Certificate in instructional technology
- Certificate in language development specialist
- Certificate in applied linguistics
- Certificate in preventive medicine residency
- Certificate in public administration (Imperial Valley Campus only)
- Certificate in public history
- Certificate in quantitative analysis in the social sciences
- Certificate in recombinant DNA technology
- Certificates in Spanish translation and court interpreting
- Certificate in teaching the emotionally disturbed
- Certificate in technical and scientific writing

### Credentials Offered

#### Specialist Credentials
- Bilingual/cross-cultural
- Early childhood
- Reading
- Special education:
  - Communication handicapped
  - Physically handicapped
  - Learning handicapped
  - Severely handicapped
  - Gifted
  - Visually handicapped

#### Service Credentials
- Administrative
- Clinical rehabilitative
- Library
- Pupil personnel
- School psychology
- Health (school nurse)

#### Teaching Credentials
- Multiple subjects
- Single subject
- Community college

### Minors for the Bachelor's Degree

- Accounting
- Aerospace studies
- African studies
- Afro-American studies
- American Indian studies
- American studies
- Anthropology
- Art
- Art history
- Asian studies
- Astronomy
- Biology
- Botany
- Business management
- Chemistry
- Child development
- Classical humanities
- Classics
- Communicative Disorders
- Comparative literature
- Computer science
- Dance
- Drama
- Economics
- Educational technology and librarianship
- Engineering
- English
- Environment and society
- European studies
- Finance
- French
- Geography
- Geological sciences
- German
- Gerontology
- Health science
- History
- History of science and technology
- Home economics
- Humanities
- Industrial arts
- Information systems
- Insurance
- Italian
- Jewish studies
- Journalism
- Latin American studies
- Linguistics
- Marketing
- Mathematics
- Mexican-American studies
- Middle East studies
- Military science
- Music
- Oceanography
- Personnel and industrial management
- Philosophy
- Physical education
- Physics
- Political science
- Portuguese
- Production and operations management
- Psychology
- Public administration
- Radio-television
- Real estate
- Recreation
- Religious studies
- Russian
- Small business management (Imperial Valley Campus only)
- Social work
- Sociology
- Spanish
- Speech communication
- Women's studies
- Zoology
Course Numbering

Courses numbered 100 through 299 are in the lower division (freshman and sophomore years); those numbered 300 through 499 are in the upper division (junior and senior years) and intended for undergraduates; those numbered 500 through 599 are also acceptable for advanced degrees; those numbered 600 through 799 are strictly graduate courses; and those numbered 800 through 899 are doctoral courses. Courses numbered X-900 through X-999 are those offered only through Extension to meet specific academic needs of community groups and are applicable as general elective credit toward an undergraduate degree at SDSU. Courses X-900 through X-949 are designated as lower division and X-950 through X-999 are designated as upper division. It is the prerogative of the academic department/college to determine if an X-900 level course is applicable to a major, a minor, or toward specified electives. The X-900 level courses are offered in conjunction with certificate programs only. Courses at the X-900 level are not acceptable on advanced degree programs.

Extended Studies students who eventually plan to pursue an undergraduate degree at SDSU should consult the sponsoring academic department to ascertain the applicability of X-900 level courses offered in any certificate program toward their proposed course of study.

The Unit or Credit Hour

In the listing of courses that follow, figures in parentheses indicate the unit value of the course. One unit or credit hour represents 50 minutes of recitation or lecture, together with the required preparation, or three hours of laboratory work or two hours of activities, each week for a semester.

Prerequisites for Undergraduate Courses

Students must complete a course prerequisite (or its equivalent) prior to registering for the course to which it is prerequisite. Students who have not completed the stated prerequisite must notify the instructor by the end of the second week of class in order for the instructor to determine if the student has completed the equivalent of the prerequisite.

Semester in Which Courses Are Offered

In the listing of courses that follows, Roman numeral I indicates a course offered in the fall semester, Roman numeral II indicates a course offered in the spring semester. An "S" indicates a course offered during wintersession. Following the course title are designations of credit and the semester in which course is offered. Examples:

- (3) I: Three units, offered in fall semester.
- (3) II: Three units, offered in spring semester.
- (3-3) I, II: Three units each semester. Year course normally beginning in fall semester.

Although the university fully expects to carry out the arrangements planned in the list of courses, it reserves the right to make changes. Classes in which the enrollment does not come up to the minimum number set by the Trustees of The California State University may not be offered or may be postponed.

Common Courses

Experimental or Selected Studies or Topics or Workshop Courses (296, 496, 596)

Courses offered by departments under the numbers 296, 496, 596 are subject to the following conditions: no more than nine units of such courses shall be applicable toward a bachelor's degree; such courses may be applicable toward the minor or toward preparation for the major only with the approval of the department chair.

Honors Courses (300)

These courses are intended for students with superior scholastic records and aptitude. Interested students should direct their inquiries to the chair of the department concerned.

Special Study (499)

These courses provide opportunity for individual study of a subject not offered in the regular curriculum. The student does this outside of the classroom. The student should seek out an instructor under whose supervision he/she wishes to work, discuss the topic with the instructor, and come to an understanding on the amount of time he/she is to devote to the topic, the credit to be earned, and the mode of investigation and report. As with regular courses, the expectation is that the student will devote three hours per week to the subject for each unit of credit. Maximum credit six units per department.

Credit/No Credit Courses

Courses which are offered for credit/no credit are indicated by the symbols Cr/NC in the course title.
Academic Skills
In the College of Arts and Letters

Faculty
Emeritus: MacDonald
Chair: Basile
Professor: Basile
Associate Professor: Donman
Assistant Professor: Johns, Sweedler-Brown
Lecturers: Agatucci, Albanese, Allister, Beveridge, Brown, G., Carella, Duran, Jensen, Johnson, M., Johnson, P., Maggio, Miller, Nower, Orton, Potts

Offered by the Academic Skills Center
Courses in mathematics, reading, writing and learning skills.
Major or minor work in academic skills is not offered.

LOWER DIVISION COURSES
The Academic Skills Center, located in the Professional Studies and Fine Arts building, offers courses and individual assistance to all students at any university level, including bilingual and international students who wish to improve mathematics, reading, writing or other skills, or obtain help with study problems or writing projects. Course work leading to satisfaction of the graduation requirement in mathematics and writing competency is offered in the Center.
Academic skills courses may not be used to satisfy general education requirements and no more than three units of 143, 151 and 296 may be applied towards a bachelor’s degree. Credit earned in Academic Skills 102, 103, 110, 111, 131, 132, 133, 141, and 150 may not be applied toward a bachelor’s degree.

102. Fundamentals of Mathematics (3) Cr/NC
This course is open only to students who fail the competency examination as administered by the San Diego State University Test Office. Fundamentals of Mathematics 102 cannot be used to satisfy General Education requirements, and credit earned will not be counted toward the bachelor’s degree.
Topics from algebra, with applications to practical problems. Elementary notions from geometry, probability and statistics. Credit in this course satisfies the mathematics competency requirement. (Formerly numbered Mathematics 102.)

103. Intermediate Algebra (3) Cr/NC
Prerequisites: One year of elementary algebra and completion of mathematics competency requirements. Review of elementary algebra, exponents, radicals, logarithms, quadratic equations, arithmetic and geometric progressions. This course is specifically designed to prepare students for Mathematics 119, 120, 121, 140 or 250 and is not open to students with credit in Mathematics 119 or higher-numbered courses. May not be used to satisfy General Education requirements and will not count towards the bachelor’s degree. (Formerly numbered Mathematics 103.)

110. Writing Development (3) I, II, S Cr/NC
Sentence, paragraph, and essay writing skills. Final is writing competency examination. Students not passing exam must take Academic Skills 150. Open to students who have not satisfied the writing competency requirement. Credit earned in this course not applicable to a bachelor’s degree or General Education. (Formerly numbered Academic Skills 100.)

111. Reading Development (3) I, II Cr/NC
Two lectures and two hours of laboratory.
Improvement of individual reading effectiveness: speed and comprehension, reading for the main idea, skimming, scanning, and word power. Credit earned in this course not applicable to a bachelor’s degree.

131. Fundamentals of English for International or Bilingual Students (3) I, II Cr/NC
A first course in English intended to develop speaking and listening abilities and elementary reading and writing skills. Satisfactory completion of this course qualifies a student to take Academic Skills 132. or, at the discretion of the instructor, Academic Skills 133. Credit earned in this course not applicable to a bachelor’s degree.

132. English for International or Bilingual Students (3) I, II Cr/NC
One lecture and four hours of laboratory. Intermediate course in English with emphasis on the listening, reading, and writing skills necessary for academic study. Satisfactory completion of this course qualifies a student to take Academic Skills 133. Credit earned in this course not applicable to a bachelor’s degree.

133. English for International or Bilingual Students (3) I, II Cr/NC
One lecture and four hours of laboratory. Advanced reading, writing, and research skills. Use of study materials from several academic disciplines; writing of a short research paper in the student’s area of interest. Credit earned in this course not applicable to a bachelor’s degree.

141. Mini-Course: Selected Topics (1) Cr/NC
Assorted short courses which will meet three hours a week for five weeks and will cover a variety of academic skills through intensive lectures and laboratory work.
Suggested topics: Research paper, communication skills, research tools, vocabulary development, learning skills, spelling, grammar, and speed reading. See Class Schedule for specific content. Courses from this series are not applicable toward bachelor’s degree credit.

Academic Skills / 147
Aerospace Studies

In the College of Professional Studies and Fine Arts

Faculty
Chair: Boyer
Professor: Boyer
Assistant Professors: Bickhaus, Deloatch, Weber

Offered by the Department
AFROTC curriculum
Minor in aerospace studies

AFROTC Curriculum

The department offers a four-or two-year Air Force Reserve Officers' Training Corps program designed to develop officers who have broad understanding and high growth potential. Cadets participate in dialogues, problem solving, and other planning activities designed to develop leaders and managers. All course work is done on campus with the exception of the Field Training Unit conducted at an active Air Force base and the Flying Instruction Program conducted at a local civilian flying school.

Either a four- or six-week Field Training camp is required for all students during the summer between the sophomore and junior years. Field training emphasizes military orientation for the junior officer and aircraft and aircrew familiarization. Cadets receive physical training and participate in competitive sports. They are trained in the use of weapons, drill and ceremonies, and observe selected Air Force units perform everyday operations. Upon completion of the program and all requirements for a bachelor's degree, cadets are commissioned second lieutenants in the Air Force and serve a minimum of four years active duty. Graduates who are qualified may enter pilot or navigator training immediately upon graduation. Other graduates go on active duty in a specialty consistent with their academic major, their desires, and existing Air Force needs. Graduates may request a delay from entry on active duty to continue their education or may apply for Air Force sponsored graduate study to begin immediately upon entry on active duty.

Applying for the Program

SDSU students enroll in aerospace classes by signing up for courses in the same manner as other university classes. There is no advance application needed for the freshman or sophomore (AS 100/200) classes. The last two years of ROTC (AS 300/400) lead to the commission as a second lieutenant and students must apply as early as possible during their sophomore year. The application process involves taking the Air Force Officer Qualification Test, a physical examination, and a personal interview. Students from other institutions in the San Diego area are eligible to take AFROTC and should check with the department to obtain enrollment procedures. Veterans who can be commissioned by age 36 are also eligible for the program.

Flight Instruction and Pay

The Flight Instruction Program (FIP) is offered to qualified junior cadets who have been selected to enter pilot training when reporting for active duty. The cost of the flight training is paid by the Air Force. Instruction is divided between class work taught on the campus and flying training conducted by a civilian contractor in the area.

Cadet retainer pay of $100 per month is given for 20 months of the program. Cadets receive approximately $400 during the Field Training Unit and are reimbursed for the cost of travel to and from the unit. Students may apply for ROTC-sponsored scholarships.

Aerospace Studies Minor

The minor in aerospace studies consists of a minimum of fifteen units in aerospace studies, nine of which must be upper division.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

UPPER DIVISION COURSES (intended for Undergraduates)

300A-300B. The Professional Officer (3-3)
Semester I: The Professional Officer: Leadership theory and practice. Semester II: Management principles and functions; problem solving; briefing for commissioned service.

350. Leadership Laboratory (1)
Two hours of laboratory.
Prerequisite: Concurrent registration in Aerospace Studies 300A-300B.
Demonstration laboratory designed to develop leadership and management skills, problem-solving skills, and exercise group planning, organizing and coordinating activities. Maximum credit two units.

400A-400B. National Security Forces in American Society (3-3)
Semester I: Role of professional officer in democratic society; socialization within Armed Services; and requisites for adequate national security forces. Semester II: Political, economic, and social constraints on national defense structure and impact of technological and international developments on defense policy making.

450. Leadership Laboratory (1)
Two hours of laboratory.
Prerequisite: Concurrent registration in Aerospace Studies 400A-400B.
Demonstration laboratory designed to develop leadership and management skills, problem-solving skills, and exercise group planning, organizing and coordinating activities. Maximum credit two units.

499. Special Study (1-3)
Prerequisite: Consent of Aerospace Studies Department chair.
Individual study. Maximum credit six units.
Afro-American Studies

In the College of Arts and Letters

Faculty
Chair: Weber
Professors: Chambers, Kerri, Kornweibel, Meadows
Associate Professors: Scarborough, Thomas, Tolbert, Weber

Offered by the Department
Major in Afro-American studies with the A.B. degree in liberal arts and sciences.
Minor in Afro-American studies.

Advising
All College of Arts and Letters majors are urged to consult with their department adviser as soon as possible; they are required to meet with their department adviser within the first two semesters after declaration or change of major.

Afro-American Studies Major
With the A.B. Degree In Liberal Arts and Sciences

All candidates for the degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."

A minor is not required with this major.

Preparation for the major, Afro-American Studies 101, 286; three units selected from 102, 140, 230, 231, 232, 250; and three units selected from 170A, 170B, 180 or 260. (12 units.)

Foreign Language Requirement. Twelve units in a foreign language or demonstration of equivalent knowledge in a reading examination administered by the foreign language department concerned.

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 24 upper division units to include six units of Afro-American Studies 496 and 12 units selected from one of the following areas and six units from the remaining two areas:

Area I. Afro-American Studies 330, 331, 360, 445 and 451

Area II. Afro-American Studies 363, 460, 461, 470 and 480

Area III. Afro-American Studies 382, 470, 471A and 471B

Afro-American Studies Minor

The minor in Afro-American studies consists of a minimum of 18 units to include six units selected from the courses for preparation for the major, six units selected from one of the three areas of the major, and three units from each of the remaining areas.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

LOWER DIVISION COURSES

101. Introduction to Afro-American Studies (3)
Interdisciplinary introduction that examines development and scope of subject matter orientation of Afro-American studies through analysis of major dimensions of Black experience.

102. Afro-American Lifestyles (3)
Afro-American lifestyles in the past, present, and future. Examination of contemporary problems, their roots and their effects on twentieth-century America.

120. Composition (3) I, II
Prerequisite: Completion of English Placement Test and Writing Competency requirements.
(See Graduation Requirements, I: Competency Requirements, section of this catalog.) PROOF OF COMPLETION OF COMPETENCY PREREQUISITE REQUIRED. Student to bring to first class meeting evidence of one of the following: Test score of 44+ on SAT/TSWE or 18+ on ACT or 7 essay and 150+ total on EPT or proof of having passed the final examination in Academic Skills 110 or credit for Academic Skills 150. Designed to develop and enhance composition and reading skills. Focus on writing skills that contribute to academic growth and development. Not open to students with credit in English 100 or higher-numbered composition or creative writing course or Linguistics 100 or Mexican-American Studies 111B. 

140. Oral Communication (3) I, II
Practice in speaking, critical listening, reasoning and organizing. Theory and techniques of communications used to evaluate the effect they have on the lives of Blacks and others. Not open to students with credit in Mexican-American Studies 111A or Speech Communication 103.

170A-170B. Afro-American History (3-3) I, II
American history from a Black perspective. (Satisfies American institutions requirements.)

180. Afro-American Music (3) I, II
Afro-American Music from its African roots to present. Consideration of musical styles, events, significant contributors as well as role of socio-cultural variables in development of music.

200. Intermediate Expository Writing and Research Fundamentals (3) I, II
Prerequisites: Completion of English Placement Test and Writing Competency requirements and satisfactory completion of Afro-American Studies 120 or English 100 or Linguistics 100 or Mexican-American Studies 111B. PROOF OF COMPLETION OF COURSE AND COMPETENCY PREREQUISITES REQUIRED. Development of intermediate expository writing skills and application of practical research principles.

220. Politics and Economics of Urban Development (3)
Prerequisite: Afro-American Studies 101. Political, economic, and other social implications of urban development, decay and renewal in urban context within which they occur or are undertaken. Analysis of specific programs and projects.

230. Ethnicity and Black Social Competence (3) I, II
An exploration into the concept of ethnicity as a positive mental health model for Afro-Americans in the process of identity formation and coping strategies.

231. Cultural Patterns and Black Identity (3) I, II
An analysis of institutions in society and their socializing effect upon Afro-Americans, and the cultural parameters that guide behavior.

232. Social Analysis From a Black Perspective (3)
Prerequisite: Afro-American Studies 101 or 102. Sociological concepts and models used to describe the social behavior of Afro-Americans. Issues in the interpretation of sociology from the Black perspective using the work of Black sociologists from 1900 to the present.

250. Psychology of Blackness (3) I, II
Facts, principles, and concepts which are basic to understanding human behavior. Analysis of the psychological motivations and behavioral responses of and toward Afro-Americans.

260. Introduction to Afro-American Literature (3) I, II
Modern and contemporary writing of Black-American authors. The sociopolitical impact the literature has had upon the Afro-American culture.

286. Statistics and Research (3)
Prerequisite: Mathematics 103 or qualification on the Mathematics Placement Examination. Fundamentals of research and statistics as used for writing reports, papers, books.
296. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor’s degree.

**UPPER DIVISION COURSES**
(Intended for Undergraduates)

320. Organizational Management of Urban Low-Income Neighborhoods (3)
Prerequisite: Afro-American Studies 101
Examination of relevant approaches to administration and management in relation to the acquisition of skills for the analysis, development, and management of urban programs in low-income neighborhoods.

330. Black Child Development (3) II
Attitudes, needs, and problems of the Afro-American child with emphasis on new approaches and insights into the development of positive changes for the child's growth and development.

331. The Black Family (3) I
Structure and functions of the Black family in contemporary American society.

332. Black Women: Myth and Reality (3) I
Prerequisites: Afro-American Studies 101 and 102
Experiences of Black women in America and how those images have been distorted.

350. The Black Total Theatrical Experience (3) I, II
Six hours of activity.
A "living performing arts museum" that utilizes folktales, literature, music, Africanisms, folk myths and history to artistically reflect various cultural and historical aspects of Black life. Performances are important aspect of course. Maximum credit six units.

360. Communications and Community Action (3) I, II
Prerequisite: Afro-American Studies 140 (field assignments are a major part of this course)
Application of the basic theories of communication through field projects. Study of the communication problems that exist between sociopolitical groups and the media.

362. Rhetoric of Black America (3)
Prerequisite: Three units in Afro-American history or communications. Rhetoric of Black Americans from David Walker to the present; the role rhetoric has played in the history of Black people and an analysis of the Black audience in terms of the Black experience.

363. Sociocultural Analysis of Black Languages (3)
Prerequisite: Three units in Afro-American Studies
Social and cultural function of Black languages, verbal and nonverbal, in Afro-American life, and their profound impact on larger society. Also, a probe into issues concerning validity of Black English.

380. Blacks in the American Justice System (3)
Interpretation and application of constitutional principles and judicial decisions to political and social problems faced by Afro-Americans.

445. Ethnicity and Social Psychology (3)
Prerequisite: Afro-American Studies 101 or 250
Analysis of major social psychological theories specifically focusing on how these theories relate to minority attitudes, values, and group behavior. Strategies for resolving social issues.

448. Black and Non-Black Interpersonal Relations (3)
Cognitive and experiential examination of contemporary issues around Black and non-Black interpersonal relations. Authenticity in relationships, intercultural trust, personal development, conflict resolution, and proactive belief systems. Central arm to assist Blacks and non-Blacks to facilitate communication.

451. Black Consumer Psychology (3) I, II
Prerequisite: Afro-American Studies 250
Attitude values and decision making of Black people as consumers. Laws and techniques of manipulating consumers.
American Indian Studies

In the College of Arts and Letters

Faculty
Chair: Trafzer
Associate Professor: Trafzer
Lecturers: Norris, Russo

Offered by American Indian Studies

Minor in American Indian studies.
Courses in American Indian studies.
Major work in American Indian studies is not offered.

American Indian Studies Minor

The minor in American Indian studies consists of a minimum of 15 units to include American Indian Studies 110, nine of the 15 units must be in upper division courses selected from American Indian studies or other appropriate departments (e.g., anthropology or history) in consultation with the departmental adviser.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

LOWER DIVISION COURSES

110. American Indian Heritage (3) I, II
American Indian experience and their interpretations of the natural forces of nature from European contact to modern times.

200. American Indian Literature (3) I, II
Introduction to American Indian literature: creation and origin stories, legends, and poetry from the oral tradition to contemporary American Indian authors.

201. Hopi Language Readings and Literature (4) I, II
Prerequisite: Ability to speak Hopi. Study of Hopi literature. Reading of legends, tales, stories and poetry of Hopi. Translations of literature will be from English to Hopi and from Hopi to English. (Formerly numbered American Indian Studies 201A.)

215. American Indian Psychological Perceptions (3) II
Topics relating to the dynamics of intercultural relations as reflected in the various levels of culture clash.

255. American Indian Music (3) I, II
Survey of American Indian music and the culturally diverse elements that differentiate musics of North American tribes and culture groups. Traditional forms of study and investigation contrasted and compared with cultural elements as they relate to traditions.

265. American Indian Art (3) I, II
American Indian as a creative person and artistic products from earliest examples to present surveyed through cultural elements affecting symbols, material, and media. Diverse forces generating forms which have become tradition will be central to the study.

296. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

303. American Indian Women in American Society (3) I
Historical and contemporary analysis of the role of Indian women in both Indian and dominant society.

320. American Indians in Contemporary Society (3) I, II
Sociological understanding of the American Indian groups in contemporary society with emphasis on the relationship to dominant society and why the focus has been on Indians as social problems.

400. The American Indian Political Experience (3) I
Social and political response to dominant group policies by the American Indian as compared to other minority groups.

420. Indian Peoples of California (3) I
Indian peoples of California. Their histories and cultures from oral traditions to contemporary issues. Focus on selected Indian tribes and communities.

425. Indians of the Plains (3) II
Indian peoples of the Plains. Their histories and cultures from oral traditions to contemporary issues. Focus on selected Indian tribes and communities.

430. American Indian Poetry and Fiction (3) II
American Indian literatures, focusing on selected tribal traditions. Relationship between oral traditions and contemporary American Indian poetry and fiction explored in works of Welch, Ortiz, Momaday, Silko and others.

435. Indians Through Film and Television (3) II
Images of Indians in film and television. Impact of movies and television on popular concepts of Indians. Films viewed in class.

440. American Indian History (3) I, II
Historical analysis of Indian-White contact. Emphasis on the impact of historical events upon the various cultures.

450. Bureaucracy and the American Indian (3) II
Comparative study in the dynamics of the bureaucratic influence on society, with reference to the American Indian experience.

460. American Indian Community Organization and Development (3) I, II
Study of theories and purposes of development of community organizations and their functions as they relate specifically to American Indian communities both reservation and urban. Analysis of policies which govern local community programs will be explored.

470. Roots of Indian Tradition (3) I, II
Spirits, prophesies, and renewals of the Indian way compared through symbols and ceremony. Religions will be surveyed as they have been influenced by foreign elements and philosophies. Influences on values and tribalism as reflected through symbols and other measures.

496. Topics in American Indian Studies (1-3)
An undergraduate seminar. Topics will be announced in the class schedule. Maximum credit six units. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

499. Special Study (1-4)
Prerequisite: Consent of instructor. Individual study. Maximum credit six units.

UPPER DIVISION COURSE

533. Problems in American Indian Education (3) II
Prerequisite: Three units of American Indian Studies.
Survey of education system imposed on Indian America from the close of the Indian-White military conflict period to the present. Philosophies, government policy and public school accommodation will be central to the topic. Studies, recommendations and resultant programs that affect the overall educational process will be assessed.
American Studies
In the College of Arts and Letters

Faculty
American studies is administered through the American Studies Committee whose members are elected from among the faculty of several departments in the University. For names of American studies advisers, contact the College of Arts and Letters Student Advising Center, SS-132.

Offered by American Studies
Master of Arts degree in American studies.
Minor in American studies.

Advising
All College of Arts and Letters majors are urged to consult with their department adviser as soon as possible; they are required to meet with their department adviser within the first two semesters after declaration or change of major.

American Studies Major
With the A.B. Degree in Liberal Arts and Sciences
All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements." American studies is an interdisciplinary program designed to bridge the division of knowledge into discrete disciplines. Each of the four program clusters combines American studies core courses, which relate materials and methods from various disciplines, with upper division courses from several disciplines. The courses are selected to focus on and bring into interrelationship one group of American people, one social or cultural process, one place, and one period. The special integrating work in the student's major program is a series of special studies under the direction of members of the American studies faculty in which the student produces a paper or project interrelating the four focuses of his or her studies. The paper or project must make use of two or more disciplines' analyses of the same material. Because American studies finds its center in the concept of culture, the paper or project must deal at least in part with the cultural connections among the four subjects of focus. With the approval of the American studies adviser, the student may design a program cluster comparable in format to those listed in this catalog but tailored to his or her individual interests.

Preparation for the major. American Studies 201, 12 units selected from Anthropology 102, English 250A-250B (three or six units), History 110A-110B (three or six units), (15 units.) Students should note that a number of the upper division required and recommended courses listed below have lower division prerequisites, but these prerequisites do not constitute requirements per se for the completion of the major.

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Refer to section of catalog on "Graduation Requirements.".

Upper Division Writing Requirement. History 430W, English 500W, 508W, 581W or Sociology 356W with a grade of C (2.0) or better.

Major. A minimum of 36 upper division units to include American Studies 360 or 580, 499, 501, and nine courses from one of the following clusters or a specially designed cluster. In each of the clusters, the student will normally take two courses in each of three areas of focus and three courses in one area. The student may take no more than three courses in one discipline on the major program.

Process: Development of Identity
Afro-American Studies 362 or 461, Geography 356, Mexican-American Studies 335, Music 344, Political Science 531, Sociology 422 or 547, Women's Studies 392 or 453 (when American in content).

Place: The City
Economics 458, Geography 354 or 555, History 543B, Mexican-American Studies 303, Political Science 522 or 523, Public Administration 512, Sociology 557.

Period: 1840 to the Present
No more than one course in each discipline.
English 521, 523, 524, 525, 527, 528 (when appropriate); History 534, 535A, 541B, 548B, Women's Studies 341B or 430.

Special Study: American Studies 499.

Cultural Institutions and Artifacts
People: The Family

Process: Material Culture

Place: The Southwest
No more than one course in each discipline.

Period: Colonial
No more than one course in each discipline.
Anthropology 441, 444, English 521, History 530, 531, 543A, 548A.

Special Study: American Studies 499.

American Communication
People: Decision Makers
Economics 370; History 496, Management 356; Political Science 335, 522, 531, 536, Public Administration 520; Sociology 521; Women's Studies 430.

Process: Communications
No more than one course in each discipline.
Afro-American Studies 392, 393, 461, 480, American Indian Studies 430; Art 558; English 524, 525, Journalism 408, 500, 502, 503, Mexican-American Studies 335, Music 351D, Political Science 326, Psychology 340; Sociology 545, 546. Speech Communication 475.

Place: United States

Period: Nuclear Age
Two of the following:
English 525, History 536, Natural Science 333, Women's Studies 430.

Special Study: American Studies 499.

Majority American Goals and Values
People: The Middle Class
Art 560, History 548B, Political Science 531, Sociology 521, Women's Studies 430.

Process: Tradition and Change in the Evolution of American Goals and Values
No more than one course in each discipline.
Economics 474; Education 383; English 525, Geography 356, History 435, 545A, 545B, 548A, 548B; Management 356, 456; Philosophy 564; Political Science 335, 345, 346, 348; Sociology 424, 537, 546, 547.

Place: United States
English 521, 523, 524, 525, 527; Geography 371; History 540, 546B, 547A, 547B; Political Science 305.
American Studies Minor

The minor in American studies consists of a minimum of 18 units to include American Studies 501 (Study of American Culture), and six units selected from History 546A-546B or 547A-547B or 548A-548B, and nine units selected from the courses listed below—six units from one grouping and three from the other, with no more than six units from any one department’s or program’s offerings:

**Humanities:** American Studies 360, 580; Art 560, English 522, 523.

**Social Sciences:** Anthropology 444, Economics 338, Geography 354, Political Science 305; Sociology 424.

With the consent of the American studies adviser, six units in courses not listed here may be included in the student’s program. Courses in the minor may not be counted towards the major but may be used to satisfy preparation for the major and general education requirements. In designing their American studies minor program, students may not include courses drawn from their major department.

**LOWER DIVISION COURSES**

201. Introduction to American Culture (3) I, II
ERMphasizes the concept of culture as matrix for introductory cross-disciplinary study of the American culture, through analyses of such things as artistic expression, historical events, social processes, folk and popular culture, using methodology adapted from social sciences and humanities.

296. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor’s degree.

**UPPER DIVISION COURSES**

(1-4)
Prerequisite: Consent of instructor.
Individually arranged study in interdisciplinary humanities and social sciences work.

360. Science, Technology and American Culture (3)
Effects of scientific theories and practical technologies on the growth and character of American culture. From Jefferson and Franklin to smashing of atoms and space explorations, how science and technology have influenced American values, environment, arts, politics, and national identity.

496. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor’s degree.

499. Special Study (1-3)
Individually arranged study in interdisciplinary humanities and social sciences work.

**UPPER DIVISION COURSES**

(Also Acceptable for Advanced Degrees)

501. Study of American Culture (3) II
Prerequisite: Major in American studies; open to other students with interdisciplinary interests.
American studies as a discipline, the critical methods of the field, the variety of materials for interdisciplinary study.

560. Topics in American Studies (1-3) I, II
Topics dealing with cultural images and myths, social protest, folklore, themes focusing upon fear, alienation and nationalism; problems around racism, minorities and counter-cultures. See Class Schedule for specific content. May be repeated once with new content; and with the approval of the adviser, more than once by American studies majors. Maximum credit six units applicable on a master’s degree in American studies.

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### Anthropology

**In the College of Arts and Letters**

**Faculty**
Emeritus: Anderson, Ezzell, Rogers
Chair: Leach
Professors: Ball, Bartel, Goldkind, Henry, Leach, Lippold, Pendleton, Rohrl, Watson, Whitney
Associate Professors: Greenfeld, Himes, Moore
Assistant Professor: Sonnek

**Offered by the Department**
Master of Arts degree in anthropology.
Major in anthropology with the A.B. degree in liberal arts and sciences.
Minor in anthropology.

**Advising**
All College of Arts and Letters majors are urged to consult with their department adviser as soon as possible, they are required to meet with their department adviser within the first two semesters after declaration or change of major.

**Anthropology Major**

**With the A.B. Degree in Liberal Arts and Sciences**

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on “Graduation Requirements.” A minor is not required with this major.

**Basic Requirements for All Students**

**Preparation for the major.** Anthropology 101, 102. (Six units.)

**Foreign Language Requirement.** Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Refer to section of catalog on “Graduation Requirements.”

**Upper Division Writing Requirement.** Passing Anthropology 396W with a grade of C (2.0) or better.

**Major.** A minimum of 33 upper division units in Anthropology to include Anthropology 301, 302, 304, 305, 396W and 18 upper division units of electives selected from one of the following areas:

1. **(a) General Anthropology**
   Major (continued). Six units selected from each of the following categories: (a) Anthropology 400, 500-509. (b) Anthropology 470-483, 560, 561A, 561B. (c) Anthropology 350, 410, 420-452, 520, 531, 532. Anthropology 496, 499, 582 and 583 may be used in any category when subject is appropriate.

2. **(b) Biocultural**
   Major (continued). Eighteen units selected from Anthropology 406, 483, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509. Anthropology 496, 499, 582 and 583 may be used when subject is appropriate.

3. **(c) Archaeology**
   Major (continued). Eighteen units selected from Anthropology 351, 470, 471, 472, 474, 476, 478, 481, 560, 561A, 561B, 562. Anthropology 496, 499, 582 and 583 may be used when subject is appropriate.
**Anthropology Minor**

The minor in anthropology consists of a minimum of 15 units in anthropology 9 to 12 units of which must be in upper division courses (excluding Anthropology 400A-400B). The 15 units must be selected from one of the following areas:

**Biocultural:** Anthropology 101 and 301 and nine units selected from Anthropology 406, 483, 496 (if appropriate), 499, 500, 501, 472, 474, 476, 478, 461, 496 (if appropriate), 561A, 561B.

**Sociocultural:** Anthropology 102 and 350 and nine units selected from Anthropology 305, 424, 426, 428, 429, 496 (if appropriate), 520, 532.

Courses in the minor need not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

**UPPER DIVISION COURSES**

**Human Biocultural Origins (3) I, II**

Man’s place in nature, fossil evidence for hominid evolution, evolutionary theory, racial, clinical and genetic variability, relationship of physical and cultural adaptations, the rise of civilization.

**Introduction to Cultural Anthropology (3) I, II**

May be taken before Anthropology 101. Man’s relationship to his environment, types of preliterate society, systems of social organization, politics, economics, religion, and language.

**Experimental Topics (1-4)**

Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor’s degree.

**LOWER DIVISION COURSES**

**Principles of Physical Anthropology (3) I, II**

Two lectures and three hours of laboratory.

Prerequisite: Anthropology 101.

Primate comparative anatomy and human paleontology. Physical measurement of the living subject and skeletal specimens. The statistical treatment of data in physical anthropology. Applications of physical anthropology in industry and medicolegal problems.

**Principles of Archaeology (3) I, II**

Two lectures and three hours of laboratory.

Prerequisite: Anthropology 101.

History, method, and theory of archaeological data acquisition and interpretation. Methods of data recovery and analysis suitable to resolution of historical and processual questions. Archaeological examples from a worldwide sample of prehistoric and historic societies.

**Principles of Anthropological Linguistics (3) I, II**

Two lectures and three hours of laboratory.

Prerequisite: Anthropology 102.

The structural nature of language. How languages differ, change and influence each other. The language families of the world. The significance of language for human social life in a variety of cultures.

**History of Anthropological Theory (3) I, II**

Prerequisite: Anthropology 102.

Development of theories which lie behind the science of anthropology. Applications of the theory of culture to field methods and interpretation of findings.

**World Ethnography (3)**

Prerequisite: Anthropology 102.

Cultural patterns of representative peoples. Industries, arts, social organization and supernaturalism considered with view to environmental adjustment, historical development and functional interrelation. Ethnological theories reviewed and applied in interpreting illustrative societies.

**Primitve Technology (3)**

Prerequisites: Anthropology 101 and 102.

Will develop ability to write clearly, correctly and effectively about anthropological subjects. Students will read assigned examples of anthropological writing from the main subdisciplines, write mini-ethnographies, summaries and critiques, and report on assigned research projects.

**Writing of Anthropology (3)**

Prerequisites: Anthropology 101 and 102.

Will develop ability to write clearly, correctly and effectively about anthropological subjects. Students will read assigned examples of anthropological writing from the main subdisciplines, write mini-ethnographies, summaries and critiques, and report on assigned research projects.

**Anthropology 400A-400B, Principles of Cultural Anthropology (3-3) I, II (Offered at IVC only)**

Anthropology 400A: Human evolution as a biocultural process from the perspectives of human paleontology and prehistory. Anthropology 400B: Survey of cultural cognition, family organization, government, and religion in non-Western societies. Comparison with analogous Western institutions.

**Nonhuman Primates (3)**

Prerequisite: Anthropology 101.

Basic aspects of nonhuman primates, geographical distribution, ecology (habitat, diet), external and internal morphology, locomotion and social behavior, reproduction and development.

**Language in Culture (3)**

Prerequisite: Anthropology 102.

Survey of anthropological interests in the study of language and of linguistic interests in the sociocultural context of language.

**Cross-Cultural Mythology (3)**

Prerequisite: Anthropology 102.

Mythological motifs and traditions. How mythological accounts of gods, heroes, origins, explanations and other mythological themes relate to economic, social and political aspects of culture in societies around the world.

**Music and Culture (3)**

Prerequisite: Anthropology 102.

How the forms, functions and meanings of music vary cross-culturally. Understanding a society’s music historically, holistically and experientially, with emphasis on non-Western music. Universals of music and music use. Ethnological theories of music and music change.

**Primitive Religion (3)**

Prerequisite: Anthropology 102.

426. Cultural Change and Processes (3)
Prerequisite: Anthropology 102.
The individual and the culture pattern: the acquisition of culture, innovation and invention, direction of cultural development, diffusion and interpretation of cultures. Illustrations from contemporary and historic peoples: Indians of the Southwest, Eskimos, aboriginal groups of Australia, Africa and Oceania.

428. Ecological Anthropology (3)
Prerequisite: Anthropology 102.
Biological and cultural interactions with the environment in relation to adaptations of human populations. Examples from a worldwide sample of societies.

428. Urban Anthropology (3)
Prerequisite: Anthropology 102.
Cultural roles of urban centers and processes of urbanization in non-Western, nonindustrial societies of past and present. Urban influence of traditional peasant and primitive peoples of Africa, Asia, and Latin America.

432. Principles of Personality in Culture (3)
Prerequisite: Anthropology 102.
Principles related to the determinants of human behavior contained in culture. Studies of behavior cross-culturally.

433. Cross-Cultural Cosmology (3)
Prerequisite: Anthropology 102.
Cultural perception and expression of the nature and origin of the universe, humanity and peoples: comparative capabilities. American Indian, African, Asian and other societies' cosmologies compared and applied to contemporary American issues and progress.

434. Anthropology Through Science Fiction (3)
Prerequisite: Anthropology 101 or 102.
Anthropological concepts of biological and social evolution, relativism, and ethnocentrism and adaptation through Asimov, Clarke, Heinlein, Herbert, LeGuin and other popular science fiction writers.

439. Ethnology Through Film (3)
Prerequisites: Anthropology 101 or 102.
Principles of cultural ethnology to include signs and proxemics, cultural prerequisites, kinship and social organization, and law and values. Feature and documentary films.

440. Cultures of Europe (3)
Prerequisite: Anthropology 102.
The study of society and culture in contemporary Europe, utilizing current ethnographic materials. The relationship of such studies to European culture growth and to the definition of European sociocultural regions.

441. The California Indian (3)
Prerequisite: Anthropology 102.
Native California Indian cultures with stress on the Indian groups of Southern California. The industries, arts, social organization, folklore and religion will be considered as revealed through the study of living peoples and archaeological evidences.

442. Cultures of South America (3)
Prerequisite: Anthropology 102.
Indian cultures in terms of origins, migration, relation to habitat, cultural variation and relevance to contemporary trends. Development of Inca civilization, the effects of the Spanish conquest and its aftermath.

443. Contemporary Latin American Cultures (3)
Prerequisite: Anthropology 102.
A social anthropological approach to the structure and dynamics of contemporary conditions and problems, especially as revealed in studies of particular communities. Included are such topics as ethnic and regional differences within national societies, population change, social consequences of economic changes, changing stratification systems, values, institutional change.

444. American Culture (3)
An "inside-out" view of America. What culture has to do with feeling like an American. Theory and method in anthropology. Approaches include subcultures, American values, and mass media.

445. Ethnology of North America (3)
Prerequisite: Anthropology 102.
Native cultures and the role of environmental and historical factors in North America.

446. Southwestern Ethnology (3)
Prerequisite: Anthropology 102.
Indian cultures of the American Southwest in historic times; ecological adaptations, responses to white contact, adaptations to modern American life.

448. Cultures of Oceania (3)
Prerequisite: Anthropology 102.
The aboriginal cultures and peoples of Australia, Melanesia, Micronesia, and Polynesia in prehistoric, historic, and modern times.

449. Cultures of Sub-Saharan Africa (3)
Prerequisite: Anthropology 102.
Indigenous peoples and cultures of Africa south of the Sahara. A comparison of cultural traditions, social organization, and modern trends in newly emergent nations of the area.

450. Cultures of India (3)
Prerequisite: Anthropology 102.
Indigenous peoples and cultures of India and contiguous areas of South Asia. The development of cultural traditions, social organization, and modern trends.

452. Japanese Society (3)
Prerequisite: Anthropology 102.

470. Prehistory of South America (3)
Prerequisite: Anthropology 101 or 102.
Prehistoric Indian cultures from initial occupation to the 16th century. Emphasis on major historical trends, particularly of the Andean area.

471. Archaeology of North America (3)
Prerequisite: Anthropology 101 or 102.
Archaeology of North America. Origin of the American Indian and survey of the main prehistoric cultures of the North American continent.

472. Southwestern Prehistory (3)
Prerequisite: Anthropology 101 or 102.
Prehistoric Indian cultures in the American Southwest; ecological adaptations and outside cultural influences.

474. Archaeology of Western and Central Asia (3)
Prerequisite: Anthropology 101 or 102.
Culture change in the area from Anatolia eastwards to India and including the Arabian peninsula beginning with the first evidence of hominid activity through ethnohistorically known societies.

476. Ancient Civilizations of Mexico and Central America (3)
Prerequisite: Anthropology 101 or 102.
Culture change in the area from Mexico to Central America from rise of Olmec civilization to Aztec times. Emphasis on Olmec, Maya, Teotihuacan, Zapotec, Mixtec, and Toltec peoples' cultures.

478. Archaeology of Europe (3)
Prerequisite: Anthropology 101 or 102.
Prehistoric and early historic peoples of Europe. Major topics in prehistory of Europe, including Germanic, Roman, and Byzantine influences.

481. Archaeology of East Asia and Oceania (3)
Prerequisite: Anthropology 101 or 102.
Prehistory and early history of China, Japan and Korea. Emphasis on the development of agriculture, the origin of domesticated plants and animals, and the earliest signs of human activity in the region.
483. Health and Nutrition in Antiquity (3)
Prerequisite: Anthropology 101 or 102.
Health and disease patterns in human populations from the earliest times. Analysis of food resources, their impact on health and nutrition of prehistoric peoples.

496. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 496, 498, 596 courses applicable to a bachelor’s degree.

499. Special Study (1-3) I, II
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

500. Primate Social Behavior (3)
Two lectures and three hours of laboratory.
Prerequisite: Anthropology 101.
Analysis of modes of primate socialization. Development of social behavior with emphasis on communication, group structure, aggression, and sex. Various methods of analysis and observation practiced utilizing primate collection at the San Diego Zoo.

501. Paleoanthropology (3)
Prerequisite: Anthropology 101. Recommended: Anthropology 301.
Fossil evidence for human evolution. Comparative and functional anatomy of fossil human and infrahuman primates; geochronology, paleoecology, and cultural associations; taxonomic implications.

502. Microevolution (3)
Prerequisite: Anthropology 101. Recommended: Anthropology 301.
The evolution of human populations over a short period of time. Interaction of the evolutionary forces of mutation, selection, drift and gene flow with the cultural systems of human populations.

503. Human Variation (3)
Prerequisite: Anthropology 101.
Morphological, physiological and genetic aspects of human variability. Significance of this diversity in the biological adaptations of human populations.

504. Primate Anatomy (3)
Two lectures and three hours of laboratory.
Prerequisite: Anthropology 101.
Primate anatomy both regional and systemic, including skeletal, cardiovascular and digestive systems; the integument and otolaryngology of primates.

505. Human Osteology (3)
Two lectures and three hours of laboratory.
Prerequisite: Anthropology 101. Recommended: Anthropology 301 and/or Zoology 108.
Identification of individual bones and teeth; sex, age, and racial variation; stature reconstruction; continuous and discontinuous morphological variations; paleopathology. Training in observations, measurements, and analyses.

506. Physical Anthropology of the Living (3)
Two lectures and three hours of laboratory.
Prerequisite: Anthropology 101. Recommended: Anthropology 301.
Theory and practice of techniques in measurement and description of biological variations in modern populations.

507. Genetic Markers and Anthropology (3)
Two lectures and three hours of laboratory.
Prerequisite: Anthropology 101.
Use of genetic markers in the study of human populations. Biology of blood groups, serum proteins, enzymes, etc., and analyses of gene frequencies. Significance of genetic markers in evolutionary studies.

583. Topical Anthropology (3)
Prerequisite: Anthropology 102.
In-depth study of a major subdiscipline such as Political Anthropology, Economic Anthropology, Social Anthropology, Psychological Anthropology, Cultural Ecology, Applied Anthropology, Anthropological Genetics, or Environmental Archaeology. See Class Schedule for specific content.

GRADUATE COURSES
Refer to the Graduate Bulletin.
Art

In the College of Professional Studies and Fine Arts

The Department of Art is a Member of the National Association of Schools of Art and Design. For purposes of exhibition and reference, the department reserves the right to retain for a limited period some of each student's work produced in class.

Faculty

Emeritus: Bigelow, Bowne, Dirks, Higgins, Hodge, Jackson, Longenecker, Sorenson, Swiggett
Chair: Orth
Associate Professors: Cotten, Dominguez, Dumlao, Frick, Mansfield, Papworth, Perzel, Rigby, Roberts-Fields, Sherman
Assistant Professors: Baker, R., Flaxman, Hayakawa, Moaney, Yasuda
Lecturers: Komac, Nakamura, Schamu, Smith, Tibbs

Offered by the Department

Master of Arts degree in art.
Master of Fine Arts degree in art.
Minor in art with the A.B. degree in liberal arts and sciences.
Minor in art with the A.B. degree in applied arts and sciences.
Teaching major in art for the single subject teaching credential.
Minor in art.
Minor in art history.

Art Major

With the A.B. Degree in Liberal Arts and Sciences

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."

This major in art may be planned with an emphasis in studio arts or art history. A minor is not required with this major in art.

Emphasis in Studio Arts

Preparation for the major. Art 100, 101, 102, 103, 157, 203, 204, 216, 258 and 259, Philosophy 101. (33 units.)

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Refer to section of catalog on "Graduation Requirements."

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 24 upper division units in art, selected from Art 365, 366, 371, 557 through 577, and 590, to include at least one three-unit course from each of the five groups listed below.

Ancient and Medieval Art: Art 371, 567, 568
Renaissance and Baroque Art: Art 562, 573, 574, 575
Modern Art and American Art: Art 557, 558, 560
Native American, African and Oceanic Art: Art 561, 569, 570, 576
Byzantine, Islamic and Indian Art: Art 365, 368, 572

Art Major

With the A.B. Degree in Applied Arts and Sciences

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."

The major in art may be planned with an emphasis in applied design, graphic design, interior design, environmental design, painting and printmaking, or sculpture. The programs in environmental design, interior design, and graphic design have a preprofessional orientation supplemented by a strong liberal arts background. Environmental design and interior design can lead to interior, architectural, landscape design or city planning. Graphic design prepares the student for the areas of environmental graphics, art direction, visual design for the contemporary media of advertising, fashion illustration or editorial illustration. The areas of painting and printmaking and sculpture prepare students for professional attitudes toward the fine arts and the continuation of their educational experience in graduate schools with the goal of teaching at institutions of higher learning. The preprofessional program in art education prepares the student for teaching in either elementary or secondary schools. The applied design program can be developed to specialize in ceramics, enameling, furniture design, jewelry, metal smithing, textile design and weaving.

A minor is not required with this major.

Emphasis in Applied Design

Preparation for the major. Art 100, 101, 102, 103, 203, 258, 259, and six units of art electives. (27 units.)

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 24 upper division units in art to include nine units selected from three of the areas listed below, and three units of extended work in one of the selected areas; six units of art electives; and six units of art history. Twelve units of advanced work in one area are strongly recommended.

Fiber: Art 334, 435, 436, 534, 535, 536
Metal: Art 331, 431, 531, 532
Clay: Art 325, 425, 525, 526
Enamel: Art 429, 529 (9 units)
Wood: Art 323, 423, 523

Emphasis in Graphic Design

Preparation for the major. Art 100, 101, 102, 103, 241, 243, 258, 259, and six units selected from Art 203, 204, 210, 240. (30 units)

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 27 upper division units in art to include Art 341, 441, 541; six units of art history; and twelve units selected from Art 340, 440, 443, 444, 445, 540, 542, 543, 544.

Emphasis in Interior Design

Preparation for the major. Art 100, 101, 102, 103, 247, 248, 249, 250, 251, 258, 259, and three units selected from Art 216, 220, 225. (36 units.) Recommended: Art 205, 234, 241; Family Studies and Consumer Sciences 245; Industrial Arts 121.

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.
Art Major*

For the Single Subject Teaching Credential

All candidates for the Single Subject Teaching Credential must complete all requirements as outlined in this section of the catalog under the College of Education. This major may be used by students in teacher education as an undergraduate major for the A.B. degree in applied arts and sciences.

Preparation for the major. Art 100, 101, 102, 103, 220, 258, 259, and six units of electives in art (27 units).

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Teaching Major. A minimum of 27 upper division units in Art to include six units of art history, and 21 units from Group I or Group II in consultation with the Art Education Adviser.

Group I: Eighteen units of one major emphasis area, including Art 485 and 586, and three units of one other emphasis area (21 units).

Group II: Six units of drawing, painting, or printmaking, six units of crafts or sculpture, three units of graphic communication or environmental design, and Art 485 and 586 (21 units).

*The major for the Single Subject Teaching Credential has been submitted to the Commission on Teacher Credentialing. Consult department to verify current program requirements.

Art Minor

The minor in art consists of a minimum of 21 units in art, 12 units of which must be in upper division courses in one emphasis area, as listed in the art majors. The courses must be selected in consultation with an emphasis area adviser. 

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

Art History Minor

The minor in art history includes a minimum of 18 units in art, 12 units of which must be in upper division, selected from one of the following areas:

Western Tradition: Art 258, 259, and 12 units selected from Art 371, 557, 558, 562, 568, 573, 575.

Non-Western Tradition: Art 158, 264, 265, and 12 units selected from Art 365, 366, 569, 570, 572.

Courses in the minor may not be used toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

LOWER DIVISION COURSES

100. Drawing and Composition (3) I, II
Six hours.
The ordering of two-dimensional space through drawing.

101. Design and Aesthetics (3) I, II
Six hours.
Fundamentals of space and color design. Basic course used as a prerequisite for advanced work.

102. Drawing and Composition (3) I, II
Six hours.
Prerequisite: Art 100.
Line and value in drawing; emphasis on structure and proportion, sketching, gesture, and contour drawing.

103. Three Dimensional Design (3)
Six hours.
Prerequisite: Art 101.
Introduction and investigation of design and theory, and practice in three dimensions.

157. Introduction to Art (3) I, II
An illustrated lecture course dealing with the meaning of art derived from an investigation of the principles of art. Designed to increase the understanding and appreciation of art.

158. Arts of Native America, Sub-Saharan Africa and Oceania (3)
Introduction to tribal arts of Native America, Sub-Saharan Africa and Oceania in cultural context, from ancient to contemporary period. Arts of diverse peoples living in small-scale societies are included. Field trips.

203. Life Drawing (3) I, II
Six hours.
Prerequisite: Art 102.
Drawing from the nude model. Maximum credit six units.

204. Painting (3) I, II
Six hours.
Prerequisites: Art 101, 102.
Pictorial composition and techniques of painting. Maximum credit six units.

205. Waterbase Media (3) I, II
Six hours.
Prerequisites: Art 101, 102.
Composition of still-life and landscape in aqueous media. Maximum credit six units.
210. Printmaking (3) I, II
Six hours.
Prerequisites: Art 101, 102 and consent of instructor.
Introduction and exploration of basic printmaking media. Emphasis on aesthetic and technical processes in intaglio, lithography, relief and serigraphy.

216. Sculpture (3) I, II
Six hours.
Prerequisite: Art 103.
Introduction and experimentation of basic sculpture ideas, methods and materials.

217. Life Modeling—Sculpture (3) I, II
Six hours.
Prerequisite: Art 103.
Creative experimentation with sculptural forms from the human figure.

220. Design in Crafts (3) I, II
Six hours.
Prerequisite: Art 103.
Visual and structural form in crafts.

225. Ceramics (3) I, II
Six hours.
Prerequisite: Art 103.
Design and construction of hand-built ceramic forms. Introduction of glaze for surface enrichment. Maximum credit six units.

231. Beginning Jewelry Design (3) I, II
Six hours.
Prerequisite: Art 220.
Design and fashioning of jewelry.

234. Weaving (3) I, II
Six hours.
Prerequisite: Art 220.
Structure and design of woven fabrics. Maximum credit six units.

240. Graphic Imagery (3) I, II
Six hours.
Prerequisites: Art 100, 103.
The organization concepts of design applied to experimental photographic and technical reproductive media, and environmental graphics.

241. Beginning Graphic Communication (3) I, II
Six hours.
Prerequisites: Art 102 and 103.
Creative projects exploring the interrelation of fundamental art principles and design using phonetic symbols and typography.

243. Intermediate Graphic Communication (3) I, II
Six hours.
Prerequisite: Art 241.
Typeographic and design concepts applied to layout for contemporary media.

247. The House and Its Environment (3) I, II
Architecture, interior design, landscape and city planning for forming man's physical and aesthetic environment.

249. Visual Presentation (3) I, II
Six hours.
Prerequisite: Art 248.
Methods, materials, and tools of the professional environmental designer stressing art principles.

250. The Contemporary House (3) I, II
Six hours.
Prerequisite: Art 248.
Elementary problems in neighborhood planning, house design, and landscaping.

251. Interior Design I (3) I, II
Six hours.
Prerequisite: Art 103.
Creative functional and aesthetic studies in interior space and form. Relationships of light, color, texture, shape and volume.

258. Appreciation and History of Art (3) I, II
Art development in painting, sculpture, architecture, and handicrafts from the dawn of art to the Renaissance. Illustrated.

259. Appreciation and History of Art (3) I, II
The period from the Renaissance through the modern school treated in the same manner as in Art 258.

264. Chinese Art (3) I
A study of the arts of China.

265. Japanese Art (3) II
A study of the arts of Japan.

266. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

UPPER DIVISION COURSES
(Intended for Undergraduates)

323. Furniture Design (3) I, II
Six hours.
Prerequisite: Art 101.
Study of the principles of design through the making of furniture.

325. Ceramics (3) I, II
Six hours.
Prerequisite: Art 225.
Basic methods of forming, decorating, glazing and firing pottery forms with emphasis on the use of the potter's wheel.

331. Beginning Jewelry and Metalwork (3) I, II
Six hours.
Prerequisite: Art 220.
Creative design and construction in metal of jewelry and small objects. Techniques in three-dimensional forming and constructions in nonferrous metals. Not open to students with credit in Art 231.

334. Advanced Weaving (3) I, II
Six hours.
Prerequisite: Art 220.
Creative functional and aesthetic studies in interior space and form. Relationships of light, color, texture, shape and volume.

340. Advanced Graphic Imagery (3) I, II
Six hours.
Prerequisite: Art 240.
Investigation of experimental photographic and technical reproductive media.
341. Graphic Communication (3) I, II
Six hours.
Prerequisite: Art 243.
Investigation of design concepts relating to advertising.

347. The House and Its Environment (3) I, II
Architecture, interior design, landscape and city planning for forming man's physical and aesthetic environment, its simplicities and complexities. Not open to students with credit in Art 247.

348. Environmental Media (3)
Six hours.
Prerequisite: Art 249.
The communication of Environmental Design using photography, miniatures, mockups, and transfers with terminal emphasis in transparency projection.

352. Professional Lectures in Interior Design (2) I, II
Prerequisites: Art 250, 251.
Interior designers lecture on varied topics in successful professional practice to include codes, legal liabilities, contractual agreements, project management. Design requirements for specific project types include restaurants, medical and health facilities, financial institutions. Occasional field trips required. Maximum credit four units.

365. The Art of Persia and the Islamic World (3) I
Prerequisite: Upper division standing.
Painting, architecture and sculpture and minor arts of Persia and the Islamic world which manifest cultural history and heritage. Field/museum trips. (Formerly numbered Art 566.)

366. The Art of India and Southeast Asia (3) II
Prerequisite: Upper division standing.
Painting, architecture and sculpture of India and Southeast Asia viewed through their cultural history and aesthetic values. Field/museum trips. (Formerly numbered Art 565.)

371. Medieval Art (3) I
Prerequisites: Art 258 and 259.
Development of painting, sculpture and architecture from the time of Constantine through the Gothic period. (Formerly numbered Art 571.)

381. History and Theory of Environmental Design (3) Irregular
Prerequisites: Art 258, 259.
Environmental arts. From earliest times to the 15th century.

387. Exploration in Crafts for Young People (3) I, II
Six hours.
Prerequisite: Art 101.
A design-crafts course that explores in depth materials and processes that could be used with young people. Not open to students with credit in Art 220.

403. Advanced Life Drawing (3) I, II
Six hours.
Prerequisite: Art 203.
Drawing the nude model. Maximum credit six units.

404. Intermediate Painting (3) I, II
Six hours.
Prerequisite: Art 204.
Pictorial composition and painterly process. Maximum credit six units.

405. Intermediate Waterbase Media (3) I, II
Six hours.
Prerequisite: Art 205.
Composition in watercolor and related media.

406. Design and Composition (3) I, II
Six hours.
Prerequisites: Art 103 and 204.
Structure in picture making.

407. Black and White Photography as a Fine Art Medium (3) I, II
One lecture and four hours of activity.
Prerequisites: Minimum of 12 units of art and consent of instructor.
Basic to intermediate photo and darkroom techniques combined with independent research in contemporary art and photography. Criticism in context of contemporary. Maximum credit six units.

410. Intaglio Printmaking (3) I, II
Six hours.
Prerequisites: Art 203, 210.
Creative intaglio—etching, drypoint, aquatint, engraving and variations. Emphasis on fine print quality and technical development. Maximum credit six units.

411. Lithography Printmaking (3) I, II
Six hours.
Prerequisites: Art 101 and 203.
Creative lithography—stone and plate planographic process. Emphasis on fine print quality and technical development. Maximum credit six units.

418. Intermediate Sculpture (3) I, II
Six hours.
Prerequisite: Art 216.
Individual investigations into sculpture ideas, methods and materials. Individual development in sculpture. Maximum credit six units.

423. Advanced Furniture Design (3) I, II
Six hours.
Prerequisite: Art 323.
Advanced individual design: Exploration of materials, process and function. Maximum credit nine units.

425. Ceramics (3) I, II
Six hours.
Prerequisite: Art 325.
Continuation of Art 325. Further development of knowledge, skills and philosophy of ceramics through individual creative projects.

429. Design in Enamels (3) I, II
Six hours.
Prerequisite: Art 325.
Design and production of vitreous enamels. Maximum credit six units.

431. Jewelry and Metalwork (3) I, II
Six hours.
Prerequisites: Art 231 or 331.
Creative design and techniques in metalsmithing.

435. Nonwoven Textile Construction (3) I, II
Six hours.
Prerequisite: Art 220.
Design and production of nonwoven materials. Maximum credit six units.

440. Advanced Graphic Communications - Environmental Graphics (3)
Six hours.
Prerequisite: Art 241.
Study of visual design for contemporary architectural, motivational, display traffic and guidance graphics.
441. Advanced Graphic Communication – Media (3)
Six hours.
Prerequisite: Art 341.
Application of visual design concepts to graphic design, advertising media and technical reproductive processes.

443. Drawing and Illustration for Graphic Communication (3)
Six hours.
Prerequisites: Art 103 and 203.
Disciplines of realistic, descriptive illustration. Methods, materials and tools of the professional graphic designer and illustrator.

444. Visual Communication Media (3) I, II
Six hours.
Prerequisite: Art 341.
Experimental, creative and practical exploration of contemporary communication as related to magazine and editorial layout. Production of a student designed limited edition.

445. Internship in Graphic Design (3) I, II C/N/C
Prerequisite: Art 441.
Field experience in design, business procedures, management, client relationships, and supervision of subcontractual work with local practicing professionals. Maximum credit six units.

450. Synergistic Environments (3)
Six hours.
Prerequisites: Art 249, 454.
Synthesis of materials, space, sound and light using exploratory methods in full scale projects.

451. Interior Design II (3) Irregular
Six hours.
Prerequisites: Art 249, 250, 251.
Survey, analysis and conceptual design methods of residential interiors stressing materials, equipment, components and structural detailing. Maximum credit six units.

452. Interior Design Practicum (3) C/N/C
Nine hours of laboratory.
Prerequisite: Art 453.
Field experience with local professional interior designers in client relationships, business procedures, supervision of subcontracted work and installation, and execution of contracts. Maximum credit six units.

453. Interior Design III (3)
One lecture, two hours of activity, and three hours of laboratory.
Prerequisites: Art 249, 250, 251.
Materials and techniques of nonresidential space planning. Estimating, specification writing, contractual agreements, record keeping, budgets, and project supervision. Required field trips to professional offices, studios and showrooms. (Formerly numbered Art 552.)

454. Environmental Design (3) I, II
Six hours.
Prerequisite: Art 247.
Survey, analysis and design synthesis of problems of more complexity, through interiors, to landscape, to architectural planning and, finally, concern for city design.

481. History and Theory of Environmental Design (3) II
Prerequisites: Art 258 and 259.
Environmental arts. From the 15th to the 19th century.

483. Museum Internship (1-6) I, II
Prerequisites: Upper division standing in art and consent of instructor.
Internship in assigned local museums and galleries under the direction of an art historian. Maximum credit six units.

485. Concepts and Observations in Art (3) I, II
Six hours.
Prerequisite: Twelve upper division units in art.
Study of principles and fundamentals of art as related to strategies of presentation.

496. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

497. Senior Investigation and Report (3) I, II
Nine hours for 497A; three hours for 497B.
Prerequisites: Six upper division units in art, and consent of instructor.
Individual research into areas of studio and art history not covered by regular courses.
A. Studio Investigations
B. History Investigations

498. Senior Project (3) I, II
Nine hours for 498A; three hours for 498B.
Prerequisite: Consent of instructor.
Investigation in art. Formal presentation of project.
A. Studio project
B. History project

499. Special Study (1-3) I, II
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

500. Advanced Drawing (3) I, II
Six hours.
Prerequisites: Art 203 and 204.
Drawing emphasizing the qualitative aspect of visual subject matter. Maximum credit six units.

501. Professional Orientation in the Arts (3) I, II
Prerequisite: Twelve units of upper division art or graduate standing in art.
Conditions met in professional art world as well as opportunities available: Exhibitions, marketing system, legal and tax responsibilities, public and private collections, grants, fellowships and professional positions investigated.

502. Inter-Media (1-3) I, II
Two hours for each unit of credit.
Prerequisites: Art 102 and 103.
Process and materials in plane and space. Maximum credit six units.

503. Life Drawing and Painting (3) I, II
Six hours.
Prerequisite: Art 404.
Pictorial composition and painterly process. Maximum credit six units.

504. Advanced Painting (3) I, II
Six hours.
Prerequisite: Art 405.
Composition in watercolor and related media.

505. Advanced Waterbase Media (3) I, II
Six hours.
Prerequisite: Art 405.
Composition in watercolor and related media.

506. Design and Composition (3) I, II
Six hours.
Prerequisite: Art 406.
Structure in picture making.

509. Relief Printmaking (3) I, II
Six hours.
Prerequisites: Art 203, 210.
Woodcut, wood engraving, gesso cut, linoleum, collagraph, and relief printmaking processes. Emphasis on fine print quality and technical development using mixed media. Maximum credit six units.
510. Intaglio Printmaking in Color (3)
Six hours.
Prerequisite: Art 410.
Advanced creative intaglio printmaking in color, including zinc and copper plate, etching, drypoint, aquatint, engraving, embossing and color variations. Emphasis on fine print quality and technical development in the color process unique to this medium. Maximum credit six units.

511. Lithography Printmaking in Color (3)
Six hours.
Prerequisite: Art 411.
Advanced creative lithography printmaking in color. Emphasis on fine print quality in color process and color technology unique to this medium. Maximum credit six units.

512. Serigraphy (3)
Six hours.
Prerequisites: Art 203, 210.
Techniques of reproducing original prints by means of the silk-screen process. Maximum credit six units.

516. Advanced Sculpture (3) I, II
Six hours.
Prerequisite: Art 416.
Individual investigations into sculpture ideas, methods and materials. Individual development in sculpture. Maximum credit six units for Art 516.
A. Ceramic sculpture
B. Plastic sculpture
C. Foundry/metal sculpture
D. Cellulose sculpture (handmade paper/wood/fiber)
E. Cellulose sculpture (handmade paper/wood/fiber)
F. Cellulose sculpture (handmade paper/wood/fiber)
G. Cellulose sculpture (handmade paper/wood/fiber)
H. Cellulose sculpture (handmade paper/wood/fiber)
I. Cellulose sculpture (handmade paper/wood/fiber)
J. Cellulose sculpture (handmade paper/wood/fiber)
K. Cellulose sculpture (handmade paper/wood/fiber)
L. Cellulose sculpture (handmade paper/wood/fiber)
M. Cellulose sculpture (handmade paper/wood/fiber)
N. Cellulose sculpture (handmade paper/wood/fiber)
O. Cellulose sculpture (handmade paper/wood/fiber)

517. Advanced Figurative Sculpture (3) I, II
Six hours.
Prerequisites: Art 216 and 217.
Figurative study with emphasis on individual exploration. Maximum credit six units.

522. Design Crafts (3) Irregular
Six hours.
Prerequisite: Art 220.
Exploration of a variety of materials and techniques. Development of the aesthetic and technical abilities of the artist/craftsman. Maximum credit six units.

523. Advanced Furniture Design (3) I, II
Six hours.
Total credit in Art 323, 423 and 523 limited to twelve units.
Prerequisite: Art 423.
Advanced individual design, exploration of materials, process and function. Maximum credit six units.

525. Ceramics (3) I, II
Six hours.
Prerequisite: Art 425.
Study of ceramic design through creative projects of clay forms. Maximum credit six units.

526. Clay and Glaze Technology in Ceramic Design (3)
Six hours.
Prerequisite: Art 425.
Experimentation and application of research concerning the use of ceramic materials and techniques as an integral part of the design process. Maximum credit six units.

529. Design in Enamels (3) I, II
Six hours.
Prerequisite: Art 429.
Design and production of vitreous enamels. Maximum credit nine units; six units applicable on a master's degree.

531. Advanced Jewelry and Metalwork (3) I, II
Six hours.
Prerequisite: Art 431.
Problems involving fabrication processes already studied in order to increase technical competence while exploring personal design statements; specialized techniques such as photoetching and electroforming. Maximum credit six units.

532. Advanced Metalsmithing (3) I, II
Six hours.
Prerequisite: Art 431.
Advanced problems involving metalsmithing processes already studied in order to increase technical competence while exploring personal design statements. Maximum credit six units.

533. Textile Techniques in Metal (3) II
Six hours.
Prerequisite: Art 331 or 435.
Textile structures as applied to precious and nonprecious metals. Individually designed projects utilizing information acquired through samples and documentation. For students of fiber, metal and sculpture.

534. Advanced Weaving (3) I, II
Six hours.
Total credit in Art 234, 334 and 534 limited to nine units.
Prerequisite: Art 334.
Advanced individual problems in weaving. Maximum credit six units.

535. Advanced Nonwoven Textile Construction (3)
Six hours.
Prerequisite: Art 435.
Advanced study in nonloom techniques. Techniques to include: looping, braiding, plaiting, and special fabricating techniques. Experimentation with new man-made fibers and with synthetic commercial dyes. Maximum credit six units.

536. Advanced Textile Design (3) I, II
Six hours.
Prerequisite: Art 436.
Application of design for the textile surface, appropriate for both the individual designer and commercial reproduction. Maximum credit six units.

540. Advanced Graphic Imagery (3) I, II
Six hours.
Prerequisite: Art 430.
Investigation of experimental photographic and technical reproductive media.

541. Advanced Graphic Communication — Communication Systems (3) I, II
Six hours.
Prerequisite: Art 341.
Symbolic processes, materials and structures, visual communications systems relating to corporate and visual identification programs. Maximum credit six units.

542. Advanced Professional Problems in Graphic Design (3)
Six hours.
Prerequisite: Art 441 or 541; or consent of instructor by portfolio review.
Refinement of personal visual imagery and the application of design concepts to production situations. Study of professional responsibilities, conduct and business procedures. Development of a professional level portfolio.

543. Advanced Drawing and Illustration for Graphic Communication (3) II
Six hours.
Prerequisite: Art 443.
Refinement of visual imagery and advanced illustration problems.

544. Visual Communication Media (3) I, II
Six hours.
Prerequisite: Art 444.
Experimental, creative and practical exploration of contemporary communication as related to magazine and editorial layout. Production of a student designed limited edition.
547. Environmental Theory (3)
Prerequisites: Art 247 or 347.
Survey of alternative solutions to the problem of design of the physical environment.

550. Environmental Prototypes (3)
Six hours.
Prerequisites: Art 247, 250, 450.
Research and development of creative architectural concepts with emphasis in space enclosure systems and cybernetics.

552. Interior Design IV (3) I, II
Six hours.
Prerequisites: Art 451 and 453.
Projects in architectural interiors involving the use and perception of enclosed spaces.
Space planning systems analysis. Maximum credit six units. (Formerly numbered Art 554.)

553. Interior Design V (3) I
Six hours.
Prerequisite: Art 552.
Projects in interiors involving space planning analysis, specification writing, materials selection and furnishing design appropriate to commercial needs. Maximum credit six units.

557. Art of the Nineteenth Century (3) I, II
Prerequisites: Art 258 and 259.
Development of painting, sculpture, and architecture from the French Revolution to 1900.

558. Art of the Twentieth Century (3) I, II
Prerequisites: Art 258 and 259.
Major movements in sculpture, painting, graphics and architecture from the beginning of this century to the present.

559. Art Since 1945 (3) I, II
Prerequisite: Art 558.
Criticism of developments in the visual arts since 1945.

560. History of American Art (3) Irregular
Prerequisites: Art 258 and 259.
Development of painting, sculpture, and architecture from the Native American Art and Colonial Period to the present.

561. Art of Pre-Hispanic America (3) I
Prerequisite: Upper division standing.
Art of ancient Meso-America, Central America, Caribbean and South America from earliest times until contact with Europe.

562. Art of Latin America (3) II
Prerequisite: Upper division standing.
Art and architecture of Latin America from the colonial period to the present. Field trips included.

567. Art of the Ancient Near East (3) I
Prerequisite: Art 258.
Development of painting, sculpture, architecture and crafts from prehistoric times to the fourth century B.C.

568. Art of Crete, Mycenae, Greece, and Rome (3) II
Prerequisite: Art 258.
Development of painting, sculpture, architecture, and crafts from prehistoric times to the fifth century A.D.

569. Art of Sub-Saharan Africa (3) I
Prerequisite: Upper division standing.
Form and content of the art of Sub-Saharan Africa viewed within its cultural context.

570. Art of Oceania (3) II
Prerequisite: Upper division standing.
Form and content of the art of Australia, Melanesia, Polynesia, and Micronesia viewed within its cultural context.

572. Coptic and Byzantine Art (3) Irregular
Prerequisites: Art 258 and 259.
The art of the Eastern Church from the reign of Justinian to the Russian Revolution.

573. Renaissance Art in Italy (3) I
Prerequisites: Art 258 and 259.
Architecture, painting and sculpture of the Renaissance period in Italy.

574. Northern Renaissance Art (3) II
Prerequisites: Art 258 and 259.
Architecture, sculpture, and painting north of the Alps during the Renaissance period.

575. Baroque and Rococo Art (3) II
Prerequisites: Art 258 and 259.
Architecture, sculpture, and painting of the Baroque and Rococo periods.

576. Arts of Native North America (3) Irregular
Prerequisite: Upper division standing.
Form and content of the arts of North American Indians viewed within a cultural context.
Field trips.

577. History of Architecture (3) Irregular
Prerequisites: Art 157, 258, 259.
Architecture from primitive times to the present.

581. History and Theory of Environmental Design (3) II
Prerequisites: Art 258 and 259.
Environmental arts in the 19th and 20th centuries.

582. The Decorative Arts (3)
Investigations into the arts of ceramics, enamelling, furniture, glass, jewelry, metalwork and textiles. Analyzing the aesthetic basis which determines their forms in various times and places. Field trips to museums and ateliers.

586. Art Practicum Seminar (3) Irregular
Prerequisites: Twenty upper division units in art and concurrent assignment to student teaching.
Discussion, readings, and research study related to art presentation strategies.

590. Principles and Elements of Visual Aesthetic Organization (3) Irregular
Three hours.
Prerequisites: Art 157, or Art 258 and 259.
Visual aesthetic materials and the psychological principles involved in aesthetic organization.

591. Gallery Exhibition Design (3) I, II
Six hours.
Prerequisite: Fifteen units of art.
Fundamental art elements and principles applied to the theories and techniques of gallery exhibition design.

592. Gallery Exhibition Design (3) I, II
Six hours.
Prerequisite: Art 591.
Advanced problems in the theories and techniques of gallery exhibition design.

596. Advanced Studies in Art and Art History
Prerequisites: Twelve units of art and art history and consent of instructor.
Advanced topics in art and art history. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units. Maximum credit three units applicable to a master's degree.

GRADUATE COURSES
Refer to the Graduate Bulletin.
Asian Studies
In the College of Arts and Letters

Faculty
Asian studies is administered through the Center for Asian Studies, composed of faculty members from the departments of Anthropology, Art, Classical and Oriental Languages and Literatures, Economics, English and Comparative Literature, Geography, History, Linguistics, Philosophy, Political Science, Religious Studies, and Sociology; the colleges of Business Administration, Education, Engineering, and Sciences; and the Library. Professor Paochicn Ghu is director. Professor William N. Rogers is graduate adviser, and Professor Dan McLeod is undergraduate adviser.

Offered by Asian Studies
Master of Arts degree in Asian studies.
Minor in Asian studies.

Advising
All College of Arts and Letters majors are urged to consult with their department adviser as soon as possible; they are required to meet with their department adviser within the first two semesters after declaration or change of major.

Asian Studies Major
With the A.B. Degree in Liberal Arts and Sciences
All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."

Preparation for the major: Six units in History 105, 106 or Philosophy 101, 102; six units in Anthropology 101, 102, Economics 101, 102, Geography 101, 102, or Political Science 101, 103; and six units in Asian Studies 105A-105B or History 120, 121 (18 units) Art 258 and 259 (unless waived by the instructor) are needed if Art 366 is selected in the major. Art 264 and 265 are recommended.

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Asian language recommended. Refer to section in catalog on "Graduation Requirements."

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major: A minimum of 30 upper division units to include six units selected from Asian Studies 458A-458B (not open to students with credit in Asian Studies 105A-105B), 499 or 596, from the humanities not less than 12 units from at least two departments selected from Art 366; Comparative Literature 430, 470*, 490*, 495*, 571*, 577*, 580, 581*; History 489, 496*; Philosophy 301 (unless waived by the instructor) and 575*, 579; Religious Studies 401, 403, 506, 508, 580*, 581* and 499*, and from the social sciences not less than 12 units from at least two departments selected from Anthropology 448, 450, 452, 481*, 496*; Economics 330, 336*, 363, 365*, 465, 489, 496* and 499*, Geography 331, 350, 540*, Political Science 361, 362, 499.

* When relevant.

Asian Studies Minor
The minor in Asian studies consists of a minimum of 21 units to include History 120 and 121, or Asian Studies 105A-105B. Other lower division courses acceptable for the minor are Art 264 and 265, and four units of an appropriate Asian language. Twelve units must be in upper division. Upper division courses acceptable for the minor include:

Humanities: Not less than six units selected from History 561A-561B, 562, 563, 564A-564B, 566, 567, 568, 569, 570; Philosophy 301 (unless waived by the 575 instructor) and 577 (when relevant), 566; Religious Studies 401*, 403*, 506*, 508*.

Social Sciences: No less than six units selected from Anthropology 450*, Economics 330, 455; Geography 331, 540 (when relevant); Marketing 376; Political Science 362, 499.

No more than six units may be selected from History 566, 567, 568. No more than six units may be selected from History 569, 570, and Anthropology 452. Three units from Asian Studies 499 or 596 may be substituted for three units in either Humanities or Social Sciences.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

* Additional prerequisites are required for these courses.

LOWER DIVISION COURSE
105A-105B. The Asian Heritage (3-3)
An interdisciplinary course on the cultures of Southern, Southeastern, and Eastern Asia, with emphasis on the interaction of ideas, peoples and their environment.

UPPER DIVISION COURSES
(Interrupted for Undergraduates)
458A-458B. Asian Cultures (3-3)
An interdisciplinary study of the people of Southern, Southeastern, and Eastern Asia emphasizing social, cultural, economic and political aspects of Asian societies. Not open to students with credit in Asian Studies 105A-105B.

499. Special Study (1-3)
Prerequisites: At least six units of upper division work completed toward the major or minor in Asian studies and the consent of the instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSE
(Also Acceptable for Advanced Degrees)
596. Selected Studies In Asian Cultures (3)
Topics on various aspects of Asian studies. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units.

GRADUATE COURSES
Refer to the Graduate Bulletin.
Astronomy

In the College of Sciences

Faculty
Emeritus: Huffer, Smith
Chair: Daub
Professors: Angione, Daub, Nelson (Director of Mt. Laguna Observatory), Schopp, Young
Associate Professor: Talbert

Offered by the Department
Master of Science degree in astronomy
Major in astronomy with the A.B. degree in liberal arts and sciences
Major in astronomy with the A.B. degree in applied arts and sciences
Minor in astronomy:

Astronomy Major
With the A.B. Degree in Liberal Arts and Sciences
All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."

Preparation for the major: Astronomy 101, 109; Physics 195, 195L, 196, 196L, 197, 197L
(16 units)

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive semesters of college study) is required for one foreign language as part of the preparation for the major. Refer to section of catalog on "Graduation Requirements."

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.


Astronomy Major
With the A.B. Degree in Applied Arts and Sciences
All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."

Preparation for the major. Astronomy 101, 109; Physics 195, 195L, 196, 196L, 197, 197L
(16 units)

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive semesters of college study) is required for one foreign language as part of the preparation for the major. Refer to section of catalog on "Graduation Requirements."

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.


Minor in Mathematics. Students majoring in astronomy must complete a minor in mathematics to include Mathematics 150, 151, 152, and either 340A-340B, or 530. Recommended: Mathematics 107, 541A, 541B, 550.

Astronomy Minor
The minor in astronomy consists of a minimum of 15 units to include Astronomy 101 and 12 upper division units selected from Astronomy 301, 304A*, 304B*, 305, 312A*, 312B*, 520*, Natural Science 430.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

* Prerequisites for this minor include Physics 195, 195L, 196, 196L, 197, 197L, and Mathematics 150, 151, 152, unless waived by the Department.

UPPER DIVISION COURSES
(Intended for Undergraduates)

301. Cosmology and Gravitational Collapse (3) I, II
Prerequisites: Three units of lower division physical science
Einstein theory of general relativity applied to problems of gravitational collapse (stellar evolution, neutron stars, pulsars, and black holes) and cosmology (origin and evolution of the Universe).

304A-304B. Advanced Astronomy (3-3)
Prerequisites: Astronomy 101 and 109 and credit or concurrent registration in both Mathematics 151 and Physics 197, 197L

305. Historic Development of Astronomy (3) I
A study of the more important problems and astronomical concepts in the light of their historical development. Particular attention is given to the biography and contributions of the more important astronomers, such as Galileo, Kepler, Newton, Herschel, Bessel.

312A-312B. Astrophysics (3-3)
Prerequisites: Astronomy 101 and Physics 197, 197L Astronomy 312A is prerequisite to 312B

498A. Senior Project (1) I
Prerequisite: An acceptable master plan for graduation within one year
Consists of the selection and design of individual projects, oral and written progress reports.

LOWER DIVISION COURSES

101. Principles of Astronomy (3) I, II
Pursuit of insights into the fundamental nature of the naked-eye night sky, the Solar System, stars and the Galaxy, and the mysteries of the remote universe

109. Astronomy Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Astronomy 101.

112. Elementary Navigation (3) I
Compass corrections, time, line of position, use of celestial coordinates, tables such as H.O. 229 for the solution of the navigational triangle.

296. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.
498. Senior Project (2) II
Six hours of laboratory.
Prerequisite: Astronomy 498A.
Laboratory work, progress reports, oral and written reports.

499. Special Study (1-3) I, II
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

520. Solar System Astronomy (3)
Prerequisites: Astronomy 101 and Physics 197, 197L.
Study of the structures of the planets, their atmospheres and satellite systems, asteroids, comets, and meteoroids, and the interplanetary medium, including the sun's influence in the system.

596. Advanced Topics in Astronomy (2 or 3) I, II
Prerequisite: Consent of instructor.
Selected topics in theoretical astronomy or astrophysics. May be repeated with new content upon approval of instructor. See Class Schedule for specific content. Limit of nine units of any combination of 496, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units.

GRADUATE COURSES
Refer to the Graduate Bulletin.
Upper Division Writing Requirement. Passing the University Writing Examination or completing English 304W.

Major. A minimum of 24 upper division units for the A.S. degree or 36 upper division units for the B.S. degree to include (1) Biology 411, 430 and 501, or (2) Biology 411, 502 and 503; and Biology 497E, 497G or 497P, and one 500-level course in biology exclusive of 501, 502, and 503. Additional courses should be selected from the following elective courses: All 400 and 500 series biology, botany, chemistry, microbiology and zoology courses; Biology 300, Chemistry 310A-310B, 361A-361B, Microbiology 310, 502, 505L, 540, 540L. All courses not covered in this list must have prior approval by the Biology Department Chair.

Biology Major*

For the Single Subject Teaching Credential in Life Sciences

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the College of Education.

This major may be used as an undergraduate major for the B.S. degree in applied arts and sciences.

Candidates for the Single Subject Teaching Credential must be recommended for the program of the College of Education by the Biological Sciences Credential Screening Committee.

Preparation for the Major. Biology 215; Botany 200; Chemistry 200, 201, and 230 or 231; Mathematics 121 and 122 or 150; Physics 180A-180B and 182A-182B; Zoology 200. (36-39 units.)

Upper Division Writing Requirement. Passing the University Writing Examination or completing English 304W.

Major. A minimum of 36 upper division units in the biological sciences to include Biology 400; Biology 411, 430, 501, or Biology 411, 502, 503, Biology 572, Biology 497E, 497G, or 497P; Botany 514 or 530 and 531; Microbiology 310, Zoology 502 or 516 or 570, and four units selected with the approval of the Teaching Credential advisor.

The major for the Single Subject Teaching Credential has been submitted to the Commission on Teacher Credentialing. Consult the department to verify current program requirements.

Biology Minor

The minor in biology consists of a minimum of 20 units in biological sciences to include Botany 200, Zoology 200, and 12 upper division units in biological sciences. Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

Certificate in Recombinant DNA Technology

The purpose of the program is to prepare current undergraduates and recent graduates in biological sciences and chemistry for employment in public and private organizations utilizing recombinant DNA technology.

Matriculated students must apply for admission to the program before completion of 15 certificate units and must complete all prerequisite and required courses with a GPA of 2.5 or better and required courses Biology 590, 590L, and 591 with grades of B or better.

The certificate requires 17 prerequisite units—Biology 502, 503, Chemistry 250 or 251, and Microbiology 310; and 29 certificate units—Biology 498, 590, 590L, 591, Biology 571 or Chemistry 577, Chemistry 560A-560B or 361A-361B and 567, and Microbiology 515 and 515L. At least 12 certificate units must be taken at SDSU and must include Biology 590, 590L, and 591. Upper division prerequisite and certificate units which may be applied to the major for B.S. degrees in biology, botany, chemistry (biochemistry emphasis), microbiology, and zoology are 30, 17, 21, 20, and 16 units, respectively.

LOWER DIVISION COURSES

100. General Biology (3) I, II
Prerequisite recommended: Concurrent registration in Biology 100L.
A laboratory course in biology stressing processes common to living organisms.

100L. General Biology Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Biology 100.
A laboratory course in biology stressing processes common to living organisms.

130. Ecosystems and Man (3) I, II
Prerequisite: A high school or college general biology course.
Man's ecosystem interrelationships: past, present and future. Examination of how human activities disturb stable ecosystem relationships and how they may be modified to re-establish steady-state patterns of ecosystem function.

145. Introduction to Heredity (3) I, II
Hereditary mechanisms and consideration of the social implications of recent and expected developments in the field of heredity. Not open to biology majors.

200. Natural History of Plants and Animals (3)
Two lectures and three hours of laboratory.
An introduction to plants and animals in relation to their environments and to one another, with emphasis on local forms and their habitats.

215. Introduction to Quantitative Biology (3) I, II
Two lectures and three hours of laboratory.
Prerequisites: Mathematics 121 or 140, Botany 200; credit or concurrent registration in Zoology 200.
Methods and experience in defining and solving quantitative problems in biology, including the design of experiments, and parametric and nonparametric statistical techniques.

261. Human Physiology (4) I, II
Three lectures and three hours of laboratory.
Prerequisites: Chemistry 100; Zoology 106; credit or concurrent registration in Chemistry 130.
Human function viewed from cellular through organ system levels of organization. Intended primarily for prenursing students. Not acceptable for credit in Biological Sciences programs (see Biology 572).

296. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

UPPER DIVISION COURSES

(Intended for Undergraduates)

300. Honors Course (1-3) I, II
Refer to Honors Program.

303-S. Contemporary Problems in Biology (1) S Cr/NC
A series of six weekly lectures on varied aspects of biology by scientists engaged in research. Reading and reports required of students enrolled for credit. These lectures are open to the public. Maximum credit three units.

310. Biology of Sex (3)
Prerequisite: Completion of Foundations section of General Education.
Traces the genetics and physiology of human reproduction from fertilization and development of the fetus to menopause and aging. Explores the biological aspects of puberty, sex hormones, menstruation, pregnancy, parturition, lactation, sterility, birth control, sexual responses, birth defects, and fetal research.

330. Energy and Environment (2-3)
Ecological implications of energy extraction, use, and development. Emphasis on policy issues.
350. Human Heredity (3) I, II
Prerequisite: Biology 100.
Selected principles of human inheritance with emphasis on relationships to other fields of human studies. Not open to students with credit in Biology 145, 430, 503, or 544 to biology majors.

351. Biology of Populations (3)
Prerequisite: A college course in biology.
The relation of modern concepts of genetics, ecology and physiology to natural populations with emphasis on the problems of human populations. Not open to majors in the biological sciences.

352. Principles of Human Physiology (3) I, II
Prerequisite: Biology 100 or Zoology 108.
Systems of the human body, their interrelationships and control mechanisms which regulate them. Required for all degrees in physical education and health science, and for specific degrees in home economics and recreation. Satisfies part of General Education requirements. Not open to students with credit in Biology 261 or 572.

380. Evolution (3)
Prerequisite: Biology 100.
Modern theory of organic evolution with emphasis on processes involved as they relate to past, present, and future evolution of mankind. Not open to biological sciences majors.

400. Bioscience Methodology (3) I
One lecture and six hours of laboratory.
Prerequisite: Consent of instructor.
Methods and techniques in the biological sciences, based on materials developed by the biological sciences curriculum committee.

405. History of Biology (3)
Prerequisite: One course in the biological sciences at the 400 or 500 level.
Lectures and reports tracing scientific development of biology. (Formerly numbered Biology 505.)

408. Analysis of Evolutionary Criticism (3) I
Prerequisite: Upper division standing in physical or life sciences.
Evolutionary theory examined through study of criticisms against it. Fringe science ideas examined for value as object lessons.

411. Ecology (4) I, II
Three lectures and three hours of laboratory.
Prerequisites: Biology 215, Physics 180B and 182B, Chemistry 201.
Ecological concepts covering all levels of organization from the individual to the ecosystem.

420. Conservation of Wild Life (3) I, II
Prerequisite: Biology 100 or Zoology 200.
Plant and animal resources with emphasis on their conservation and intelligent use.

430. Molecular Biology (4)
Three lectures and three hours of laboratory.
Prerequisites: Biology 215; Chemistry 230 or 231.
Cell chemistry and metabolism, diploid and haploid inheritance, mutations, the genetic material. Not open to students with credit in Biology 502 or 503.

462L Human Physiology Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Biology 362.
Laboratory work in human physiology. Not open to students with credit in Biology 261.

473. Biology of Aging (3)
Prerequisite: Biology 100 or Zoology 200.
Concepts and theories of aging in biological systems from the population to the molecular level. (Formerly numbered Biology 573.)

480. Analytical Procedures in Cellular Physiology (3)
One lecture and six hours of laboratory.
Prerequisite: Biology 502 or Chemistry 361A-361B or Chemistry 560A-560B.
Analytical course designed to provide undergraduates with practical laboratory experience. Includes procedures such as cell fractionation, analysis of marker enzymes and nucleic acids, biophysical measurements, microelectrode recording and computerized data acquisition.

496. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

497E. Senior Investigation and Report in Evolution (2) I, II
Prerequisites: Biology 501; senior standing and consent of instructor.
Investigation and report on current ecological literature.

497G. Senior Investigation and Report in Genetics (2) I, II
Prerequisites: Biology 503, senior standing and consent of instructor.
Investigation and report on current genetic literature.

497P. Senior Investigation and Report in Physiology (2) I, II
Prerequisites: Biology 502, senior standing and consent of instructor.
Investigation and report on current physiological literature.

498. Laboratory Experience in Modern Industrial Technology (1-5) I, II, S Cr/NC
Up to 20 hours per week in academic year, 40 hours per week in summer or winter sessions.
Prerequisite: Fifteen upper division units in biological sciences with grades of A or B and consent of instructor.
Practical laboratory experience in local industrial laboratories or in SDSU campus laboratories emphasizing current technology.

499. Special Study (1-3) I
Prerequisites: Fifteen units in biological sciences with grades of A or B and consent of instructor.
Individual study. Maximum credit six units for any combination of Biology, Botany, Chemistry, Microbiology, or Zoology 499.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

501. Population Biology (4)
Two lectures and six hours of laboratory.
Prerequisites: Biology 411 and 430.
Principles of population genetics and evolution, advanced topics in population and community ecology.

502. Cellular Physiology (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Biology 215; Chemistry 230 or 231; Physics 180B and 182B.
Cell structure, macromolecules, energetics, growth, division, transport, excitability and motility.

503. Genetics (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Biology 215; Chemistry 230 or 231.
Principles of transmission and molecular genetics, mutation, population genetics and evolution.

518. Statistical Methods in Biology (3)
Two lectures and three hours of laboratory.
Prerequisite: Biology 411 or 430.
Application of statistical techniques to biological data. Not open to students with credit for another upper division course in statistics except with written approval of the chairman of the department offering the student's major filed with the Evaluations Office.
525. Agricultural Ecology (3)  
Two lectures and three hours of laboratory.  
Prerequisite: Biology 411.  
Mechanisms controlling fertility, productivity, and regulation in agricultural ecosystems. The ecological design and management of agroecosystems.

528. Ecology of Renewable Resources (3)  
Two lectures and three hours of laboratory.  
Prerequisite: Biology 411, or 420.  
Ecological principles in exploitation and management of forest, range, watershed, and recreation lands for sustained human benefit.

530. Limnology (4)  
Three lectures and three hours of laboratory.  
Prerequisite: Biology 411.  
Biological, chemical, and physical considerations of inland waters. Field and laboratory experience in oceanographic techniques, particularly the coastal environment.

532. Fisheries Biology (3)  
Two lectures and three hours of laboratory.  
Prerequisite: Biology 411.  
Fisheries of commercial importance. The dynamics of exploited populations.

533. Systems Ecology (4)  
Three lectures and three hours of laboratory.  
Prerequisites: Biology 411, Mathematics 122 or 150, and consent of instructor.  
Theory and techniques of systems analysis and mathematical modeling as applied to ecological problems.

537. Advanced Systems Ecology (4)  
Three lectures and three hours of laboratory.  
Prerequisites: Biology 535 and consent of instructor.  
Advanced topics in the application of mathematical modeling and simulation techniques to analyses of ecological problems.

541. Developmental Biology (3)  
Prerequisite: Biology 430 or 503.  
Analysis of development with emphasis on embryonic differentiation.

559. Advanced Genetics (3)  
Prerequisite: Biology 430 or 503.  
Current topics in molecular, organismal or population genetics. Maximum credit six units.

561. Topics in Cellular Physiology (3)  
Prerequisite: Biology 502 or Chemistry 361A-361B or Chemistry 560A-560B.  
Topics selected from chromatin structure function and regulation, cell cycle analysis and regulation; cellular membrane formation, structure and function. Other topics irregularly scheduled. May be repeated once with new content.

562. Topics in Comparative Physiology (3)  
Prerequisites: Biology 502 or Zoology 540.  
Topics vary each semester and are chosen from three areas: digestion, nutrition, respiration, metabolism, blood, circulation, osmoregulation, excretion; sensory reception, neural integration and muscle function; endocrine mechanisms. May be repeated once with new content. See Class Schedule for specific content.

566. Photobiology (3)  
Prerequisite: Biology 502.  
Principles underlying visible and ultraviolet radiation effects on plants and animals, including man. Topics include photosensitization, ultraviolet effects, environmental photobiology, photomedicine, chronobiology, extraterrestrial photoreception, vision, photomorphogenesis, photomovement, photosynthesis and bioluminescence.

568. Immunobiology (3)  
Prerequisite: Biology 502 or Microbiology 540.  
Structure and function of the immunoglobulins and the chemical and physical nature of the antigen-antibody reaction.

570. Radiation Biology (3)  
Prerequisites: Physics 180B and 182B, Biology 100 or Zoology 200. Recommended: Biology 430 or 502.  
Principles underlyng radiological reactions of ionizing radiations. Effects of ionizing radiations at the biochemical, cell, organ, and organism levels.

570L. Radiation Biology Laboratory (2)  
Six hours of laboratory.  
Prerequisite: Credit or concurrent registration in Biology 570.  
The laboratory determination of the effects of ionizing radiation on biological systems.

571. Radioisotope Techniques in Biology (4)  
Two lectures and six hours of laboratory.  
Prerequisites: Physics 180B and 182B, Biology 100 or Zoology 200. Recommended: Biology 430 or 502.  
The principles and application of radioisotopes in biology. Radionuclide measurement, safe handling, tracer and radioautography techniques.

572. Physiology of Human Systems (4)  
Three lectures and one hour of discussion.  
Prerequisites: Physics 180B and 182B; Zoology 200. Recommended: Chemistry 361A and 361B, or Biology 502.  
Human physiology presented at cellular and organ system levels: membrane transport, nerve excitation, muscle contraction, cardiovascular physiology, kidney function, hormone function, reproduction and digestion. For students majoring in a natural science or engineering.

580. Regional Field Studies in Biology (1-3)  
One- to three-week periods during vacations and summer sessions; may be combined with class meetings during academic year.  
Prerequisites: At least twelve units in the biological sciences, including Zoology 200, and consent of instructor. When needed, application for collecting permit must be made at least six weeks before class begins at the Center for Marine Studies (PS-103).  
Extended field studies of the flora, fauna, and biotic communities of major natural regions of western North America. May be repeated with new content. Maximum credit six units.

590. Recombinant DNA (3) I, II  
Prerequisites: Chemistry 361A, Biology 502, 503, 591; Microbiology 310.  
Theory and practice of recombinant DNA techniques.
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590L. Recombinant DNA Laboratory (2) I, II
Six hours of laboratory.
Prerequisite: Credit or concurrent registration in Biology 590.
A laboratory course in recombinant DNA techniques.

591. Prokaryotic and Eukaryotic Molecular Biology (3) I, II
Prerequisites: Chemistry 361A; Biology 502, 503.

596. Special Topics in Biology (1-3)
Prerequisite: Consent of instructor.
Advanced selected topics in modern biology. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable on a bachelor's degree. Maximum credit six units with three units applicable on a master's degree.

GRADUATE COURSES
Refer to the Graduate Bulletin.

Botany
In the College of Sciences

Faculty
Emeritus: Gallup, Harvey, Preston, Wedberg
Chair: Johnson
Professors: Johnson; Kummerow, Rayle
Associate Professors: Alexander, Weiss
Assistant Professors: Carmichael, Donoghue

Offered by the Department

Master of Arts degree in biology with an emphasis in botany.
Major in botany with the A.B. degree in liberal arts and sciences.
Major in botany with the B.S. degree in applied arts and sciences.
Single subject teaching credential in life sciences in area of botany.
Minor in botany.

Prospective majors in the biological sciences should contact their departmental offices regarding impending curricular changes.

Botany Major
With the A.B. Degree in Liberal Arts and Sciences

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."

A minor is not required with this major.

Preparation for the major: Biology 215; Botany 200, Chemistry 200, 201, and either 230 or 231; Mathematics 121 and 122, or 150, Physics 180A-180B and 182A-182B; Zoology 200. (38-39 units.)

Foreign Language Requirement: Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. It is recommended that French, German, or Russian be chosen to meet this requirement. Refer to section of catalog on "Graduation Requirements."

Upper Division Writing Requirement: Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major: A minimum of 24 upper division units to include either Biology 411, 430, 501, or Biology 411, 502, 503, plus 12 units of 400- or 500-level botany courses, at least two of which must include a laboratory.

Botany Major
With the B.S. Degree in Applied Arts and Sciences

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."

A minor is not required with this major.

Preparation for the major: Biology 215; Botany 200, Chemistry 200, 201, and either 230 or 231; Mathematics 121 and 122, or 150, Physics 180A-180B and 182A-182B; Zoology 200. (38-39 units.)

Upper Division Writing Requirement: Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major: A minimum of 36 upper division units in the biological sciences to include Biology 411, 430, 501, or Biology 411, 502, 503, plus Botany 501 or 502 or 503; Botany 490A, 490B, 514 and 530, Microbiology 310, plus six units of 400- and 500-level electives in the biological sciences.

7-78395
Botany Major

For the Single Subject Teaching Credential in Life Sciences

All candidates for the teaching credential must complete all requirements as outlined in this section of the catalog under the College of Education.

This major may be used as an undergraduate major for the B.S. degree in applied arts and sciences.

Candidates for the Single Subject Teaching Credential must be recommended for the program of the School of Education by the Biological Science Credential Screening Committee.

Preparation for the major. Biology 215, Botany 200, Chemistry 200, 201, and either 230 or 231; Mathematics 121 and 122, or 150; Physics 180A-180B and 182A-182B, Zoology 200, (38-39 units.)

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Candidates for the Single Subject Teaching Credential must be recommended for the program of the School of Education by the Biological Science Credential Screening Committee.

Preparation for the major. Biology 215, Botany 200, Chemistry 200, 201, and either 230 or 231; Mathematics 121 and 122, or 150; Physics 180A-180B and 182A-182B, Zoology 200, (38-39 units.)

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 37 upper division units in 400- and 500-level courses in the biological sciences to include Botany 490A, 490B, and Botany 501 or 502 or 503, Botany 514 and 530; Biology 400, and either Biology 411, 430, 501, or Biology 411, 502, 503, Microbiology 310, and Zoology 510.

*The major for the Single Subject Teaching Credential has been submitted to the Commission on Teacher Credentialing. Consult department to verify current program requirements.

Botany Minor

The minor in botany consists of a minimum of 20 units in the biological sciences to include Botany 200, Zoology 200, Biology 215, plus nine units in the biological sciences, six of which must be in 400- or 500-level botany courses.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

LOWER DIVISION COURSES

100. Plants and Man (3) I, II, S

Basic structure and function of plants with emphasis on the interrelationships of plants and man.

100L. Plants and Man Laboratory (1) I, II

Prerequisite: Credit or concurrent registration in Botany 100.

Observation, experimentation, and demonstration of plants and their activities, emphasizing practical applications. Topics include plant cell structure and division, photosynthesis, mineral nutrition, morphology, anatomy, sexual and asexual reproduction, growth, development, and diversity.

200. Introduction to Botany (4) I, II

Three lectures and three hours of laboratory.

Prerequisite: Chemistry 200.

Basic botany for Life Sciences majors. Origin of life; evolution of basic metabolism; the plant cell, organelles and their function; plant structure and function; plant diversity and classification; basic concepts of genetics and plant ecology.

296. Experimental Topics (1-4)

Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

UPPER DIVISION COURSES

(Intended for Undergraduates)

312. Cultivated Trees and Shrubs (3)

One lecture and six hours of laboratory, field trips. Identification of the common cultivated trees and shrubs of the San Diego region. Trips to local parks and private gardens.

315. Plants and History (3)

Prerequisite: Completion of a college-level course in life sciences. Introduction to plant structure. History of economically and culturally important plants; techniques of obtaining various plant products; impact of these plants or plant products on the course of human events.

320. Agricultural Botany of the Imperial Valley with Laboratory (4) (Offered at IVC only)

Three lectures and three hours of laboratory. Basic botany of economically important plants using farming techniques and crops from the Imperial Valley as examples. Emphasis on relationships between human society and development of systematic agriculture. Plants examined in laboratory and on local field trips.

350. California Flora (3) II

Two lectures and three hours of laboratory (Field).

Prerequisite: Botany 100 or Biology 100 or Zoology 100.

Identification of plants and plant communities. Plants examined in laboratory and on local field trips.

490A. Senior Investigation and Report (1) I, II

One discussion period and two additional hours to be arranged.

Prerequisites: Botany 501 or 502 or 503; and senior standing. Selection of topics and design of individual project, oral and written final reports.

490B. Senior Investigation and Report (2) I, II

One discussion period and five additional hours to be arranged.

Prerequisite: Botany 490A.

Individual investigation, progress reports, oral and written final reports.

496. Experimental Topics (1-4)

Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

499. Special Study (1-3) I, II

Prerequisite: Fifteen units in botany with grades of A or B or consent of instructor. Individual study. Maximum credit six units.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

501. Phycology (4)

Three lectures and three hours of laboratory.

Prerequisite: Botany 200.

Morphology and phylogenetic relationships of the algae.

502. Mycology (4)

Two lectures and six hours of laboratory.

Prerequisite: Botany 200.

The structure, food relations, and classification of fungi.

503. Vascular Plants (4)

Two lectures and six hours of laboratory.

Prerequisite: Botany 200.

Structure, development and phylogenetic relationships of the bryophytes and vascular plants.

510. Introduction to Scanning Electron Microscopy (2) I, II

One lecture and three hours of laboratory.

Prerequisite: Botany 200.

Theory and use of a scanning electron microscope for biological research. Laboratory is project oriented.

514. Plant Taxonomy (4)

Two lectures and six hours of laboratory, field trips.

Prerequisite: Botany 200.

The study of variation, primarily in flowering plants; classification, identification, nomenclature, distribution.
526. Plant Pathology (4)
Three lectures and three hours of laboratory.
Prerequisite: Botany 200. Recommended: Botany 502.
A practical course dealing with the principles of disease in plants, control measures, and quarantine procedures. Emphasis is placed on the determination and control measures of those pathogenic organisms which affect crops, trees and shrubs and nursery stock.

530. Plant Physiology (3)
Prerequisites: Botany 200; Chemistry 201 and either 230 or 231.
Activities of plants, including photosynthesis, ion transport, translocation, water relations, growth and development.

531. Plant Physiology Laboratory (1)
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Botany 530.
Laboratory experiments designed to demonstrate principles of water movement, ion transport, energy metabolism, growth and development in plants.

540. Plant Anatomy (4)
Two lectures and six hours of laboratory.
Prerequisite: Botany 200.
The arrangement of structural elements within plant organs, with emphasis on cell and tissue types.

542. Agricultural Botany (2)
Field trips to be arranged.
Prerequisite: Botany 200.
California crop plants, their general identification, cultural methods, and regional distribution.

596. Selected Topics in Botany (2-3)
Prerequisite: Consent of instructor.
Selected topics in classical and modern botany. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units.

GRADUATE COURSES
Refer to the Graduate Bulletin.

College of Business Administration
A member of the American Assembly of Collegiate Schools of Business

Faculty
Dean: Bailey
Associate Dean, Academic Affairs: Warschauer
Associate Dean, Graduate Studies: Barber
Associate Dean, External Relations: Brown
Assistant Dean, Student Affairs: Newton

Offered by the College of Business Administration
Master of Science degree in accountancy.
Master of Science degree in business administration.
Master of Business Administration.
Minor with the B.S. degree in business administration in the following fields: accounting, finance, financial services, information systems, insurance, management, marketing, real estate.
Teaching major in business for the single subject teaching credential.
Minors in the following fields: accounting, business management, personnel and industrial relations, finance, information systems, marketing, production and operations management, real estate, small business management (available at Imperial Valley Campus only). Certificate in business administration (available at Imperial Valley Campus only).

The Business Administration Program — Admission to Majors
The undergraduate business administration program at San Diego State University is structured such that students desiring a business administration major are first admitted to the prebusiness administration major for their first two years of university work. During these first two years students should complete general education courses and a common core of eight lower division preparation for the business major courses — Accountancy 212, Accounting Fundamentals; Finance 140, Business Law; Economics 101, Principles of Economics (Macro); Economics 102, Principles of Economics (Micro); Information Systems 180, Principles of Information Systems; Information Systems 290, Written Communications in Business (not required for accounting majors); Mathematics 119, Elementary Statistics, and Mathematics 120, Mathematics for Business Analysis (Mathematics 141 for accounting majors). These prerequisite courses may not be taken CR/NC; the minimum grade in each class is C—.
Supplemental admissions criteria must be met before students may declare an upper division major and be eligible for upper division courses. For current information concerning admissions criteria and procedures, contact the Undergraduate Planning and Advising Center in the College of Business Administration.
Students will be required to take a proficiency test in accounting fundamentals before they will be admitted to an accounting major.

Transfer Credit
No credit will be given for upper division business majors course work taken at an institution having a business program that has not been accredited by the American Assembly of Collegiate Schools of Business. Exceptions made upon recommendation of the student's major department. Credit will be given for the unaccredited work on a course-by-course basis.

Graduation Requirements
The student must complete the requirements listed below for the bachelor's degree. (Refer to the section of this catalog on Graduation Requirements for specific information.)
1. A minimum of 128 semester units for the B.S. degree. No less than 40 percent of these units must be in business and economics. A minimum of 52 units of course work applicable to the bachelor's degree must be completed outside the areas of business administration and economics.
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2. A minimum of 30 units in residence. Twenty-four of these shall be earned in upper division courses and shall include at least one-half of the major.
3. A scholastic grade point average of 2.0 (grade of C on a five-point scale) or better in (a) all units attempted; (b) all units in the major; and (c) all units attempted at this college.
4. At least 36 upper division units for the B.S. degree.
5. One major.
6. Satisfactory completion of competency tests in mathematics and writing, or completion of appropriate courses designated in lieu thereof.
7. All regulations established by the university.
8. American Institutions, to include competences in American history, institutions and ideals; U.S. Constitution; and California state and local government.
9. A minimum of 49 units in general education, to include at least a minimum of nine upper division units. No more than 12 units may be used for general education credit from any one department or academic unit. A maximum of three upper division units in excess of 36 units for the B.S. degree required for the major but taught outside the major department may satisfy the requirements both for general education and the major if such courses have been approved for general education.
10. Application for graduation.
11. Effective the 1982-83 academic year, upper division concentrations must be declared to be eligible for a B.S. degree in Business Administration. "Generic" B.S. degrees in business will no longer be available. Students who had been advised about the existence of a generic degree will be awarded this degree only upon specific request.

The Major
Each major in business administration consists of a pattern of prescribed upper division courses. The minimum number of units required is stated in the description of each major. No student will be permitted to register for an upper division course who has not completed the prerequisites for that course. Also required as preparation for the major are the lower division prerequisite courses. These prerequisite courses may not be taken CR/NC. Business administration majors are not required to complete a minor for the degree. For information on general education and other degree requirements, refer to the section of this catalog on Graduation Requirements.

A minimum of 52 units of course work applicable to the bachelor's degree must be completed outside the areas of business administration and economics.

Small Business Management Minor (Imperial Valley Campus)
The minor in small business management consists of a minimum of 22 units to include Economics 101, 102, Accountancy 210A and 210B, or 212; Management 350, 450; Marketing 370; and three units selected from Accountancy 315, Finance 321, 341, 389, or Management 356. (15-16 units.)

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

Certificate in Business Administration (Imperial Valley Campus)
This certificate is designed primarily for persons who want to gain an increased understanding of essential principles through upper division business courses, and for students who decide to go on to pursue the B.S. degree with a major in either management, finance, accounting, marketing, information systems, insurance, or real estate at the San Diego campus. For those not seeking the B.S. degree it provides a program designed to give self-improvement opportunities for the purpose of securing employment, promotion or upward mobility on the job. All students seeking admission to the program must have successfully completed 56 transferable lower division units with a grade point average of 2.0. This includes completion of the lower division preparation required for any business administration major, i.e., Accountancy 210A-210B or 212; Finance 140, Information Systems 180, 290; Economics 101 and 102, Mathematics 119 or Economics 201, and Mathematics 120.

The Certificate will be awarded upon successful completion of the following courses: Finance 323; Management 301 or 302, 350; Marketing 370; and three units selected from Accountancy 315, Finance 321, 341, 389, or Management 356. (15-16 units.)

UPPER DIVISION COURSES IN BUSINESS ADMINISTRATION
(Extended for Undergraduates)

300. Honors Course (1-3) I, II
Refer to Honors Program.

306. Scope and Function of Business Education (3) I
Philosophy, scope, and functions of business education; analysis and development of curricula; instructional foundations of basic business subjects.

401. Business Internship (1-3) I, II
Prerequisite: Consent of faculty adviser.
Students are to be assigned to business firms to work under the joint supervision of the business firms supervisor and the course instructor.

402. Business Professions (3)
Prerequisites: Finance 323; Management 301 or 302, 350; Marketing 370.
For seniors in College of Business Administration.
Enables students to evaluate their professional potentials through series of classroom panels of business executives representing wide range of business-industry areas and through personal interview with business executives.

404. Small Business Administration (3)
Prerequisites: Finance 323; Management 301 or 302, 350; Marketing 370; and consent of instructor.
Counseling of existing small businesses in conjunction with the Small Business Administration. Application of principles from all fields of business administration. Maximum credit six units.

406. Methods in Teaching Business Skills (3) II
Philosophy and psychology of teaching business skills; presentation and evaluation of objectives, techniques, and materials for skill development.

499. Special Study (1-3) I, II
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

GRADUATE COURSES IN BUSINESS ADMINISTRATION
Refer to the Graduate Bulletin.
Accountancy

Faculty
Emeritus: Brown, Dodds, Ferrel, Harned, Odmark, Wright
Director: Samuelson
Professors: Bailey (Dean), Barnett, Brodshatzer, Butler, Lamden, Lightner, K., Meier, Maigs, Samuelson, Snudden, Toole, Whittenburg, Whittington, Williamson
Associate Professors: Ballew, Knutsen, Lightner, S.
Assistant Professor: Wong-Boren
Visiting Lecturers: Butler, Griffin

Offered by the Department
Master of Science degree in accounting
Major in accounting with the B.S. degree in business administration.
Teaching major in business for the single subject teaching credential.
Minor in accounting.

Accounting Major
With the B.S. Degree in Business Administration

The basic objectives of the bachelor of science program in accounting is to provide basic conceptual accounting and business knowledge to students seeking professional careers in the field of accounting. The knowledge acquired in the B.S. program should be sufficient for entry-level positions in government, industry, and public accounting. The program provides the opportunity to gain the necessary knowledge to pass professional examinations in accounting such as the C.P.A. and C.M.A. examinations. The accounting curriculum in the B.S. program also provides the foundation for future career development and for expansion of the student's knowledge of accounting in the future.

For the Single Subject Teaching Credential

All candidates for the single subject teaching credential in business must complete all requirements for the applicable specialization as outlined in this section of the catalog under the College of Education. Students must complete the requirements of a major in one of the five departments within the College of Business Administration. In consultation with the Coordinator of Teacher Education in the College of Business Administration, undergraduate students shall develop programs which fulfill the State credential requirements. All undergraduate majors must demonstrate typing proficiency. Finance 389, Personal Financial Planning, is required for all teaching credential majors.

*The major for the Single Subject Teaching Credential has been submitted to the Commission on Teacher Credentialing. Consult department to verify current program requirements.

Accounting Minor

The minor in accounting consists of a minimum of 20 units to include Accountancy 212, 310, 311 and 312. Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

LOWER DIVISION COURSES IN ACCOUNTANCY

210A. Accounting Fundamentals I (3) I, II, S
Principles of financial accounting including study of accounting cycle and accounting for cash, receivables, payables, inventories, payroll, partnerships. (Not open to students with credit in Accountancy 210B.)

210B. Accounting Fundamentals II (2) II, S
Prerequisite: Accountancy 210A. Principles of financial accounting including study of accounting for plant and equipment, bonds, equities, investments, income taxes, funds flow. (Not open to students with credit in Accountancy 210B.)

212. Accounting Fundamentals I, II (4) I, II, S
Principles of financial accounting including study of accounting cycle and accounting for cash, receivables, payables, inventories, payroll, partnerships, plant and equipment, bonds, equities, investments, income taxes, funds flow. (Not open to students with credit in Accountancy 210A or 210B.)

286. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 286, 496, 596 courses applicable to a bachelor's degree.

UPPER DIVISION COURSES IN ACCOUNTANCY
(Interested for Undergraduates)

310. Intermediate Accounting I (4) I, II, S
Prerequisite: Minimum grade of C in Accountancy 210A, 210B or 212. Theories and principles underlying accounting for cash, short-term investments, receivables, inventories, current liabilities, plant and equipment, intangible assets, contributed capital, retained earnings.

311. Intermediate Accounting II (4) I, II, S
Prerequisite: Accountancy 310 with minimum grade of C. Theories and principles underlying accounting for long-term investments, stock options,dividends, bonds, earnings per share, income taxes, pensions, leases, funds flow, changing prices.

312. Managerial Cost Accounting Systems (4) I, II
Prerequisites: Minimum grade of C in Accountancy 210A, 210B or 212. Management use and design of accounting systems for planning and control; theories and practices of cost accounting, job order cost systems, process cost systems, standard cost systems, inventory control systems, distribution analysis, and capital budgeting.

314. Advanced Accounting Problems (4) I, II
Prerequisite: Credit or concurrent registration in Accountancy 311. Problems involved in partnerships, consignments, consolidations, receiverships, foreign exchange, fund accounting, and other specialized areas.

315. Accounting for Managers (4) I, II
Prerequisites: Accountancy 212 and credit or concurrent registration in Management 350. Managerial accounting and financial accounting for nonaccountants. Not open to students with credit in Accountancy 310 or 312.

316. The Accounting Profession (1) Cr/NC
Prerequisite: Completion of preparation for major. Analysis and evaluation of professional opportunities that utilize the accounting and reporting functions.
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Finance

Faculty
Emeritus: Fisher, H., Schmier, Wijnholds
Chair: Vandenberg
Professors: Hippaka, Hungate, Hutchinson, Neuberger, Nye, Reints, Short, Vandenberg, Warschauer (Associate Dean, Academic Affairs)
Associate Professors: Block, Brown, Cherin, Fisher, R., Haddad, Sachdeva, Salehi zadah, Stier
Assistant Professors: Bost, Wilbur

Offered by the Department
Master of Science degree in business administration.
Master of Business Administration.
Major in finance with the B.S. degree in business administration.
Major in financial services with the B.S. degree in business administration.
Major in real estate with the B.S. degree in business administration.
Teaching major in business for the single subject teaching credential.
Minor in finance.
Minor in insurance.
Minor in real estate.

Finance Major

With the B.S. Degree in Business Administration

Preparation for the major. Accountancy 210A-210B or 212; Finance 140, Information Systems 180, 290; Economics 101 and 102; Mathematics 120 or 150, and Economics 201 or Mathematics 119, (25-27 units). These prerequisite courses may not be taken Cr/NC; the minimum grade in each class is C-.

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 40 upper division units to include Accountancy 310, 321, 323, 325, 327, 423, Management 301 or 302, 350, 405, Marketing 370, Economics 490; at least three units selected from Finance 329 and 425, and three units of electives selected from Business Administration. A minimum of 62 units of course work applicable to the bachelor’s degree must be completed outside the areas of business administration and economics.

Financial Services Major

With the B.S. Degree in Business Administration

Preparation for the major. Accountancy 210A-210B or 212; Economics 101 and 102; Economics 201 or Mathematics 119; Information Systems 180 and 290; Mathematics 120 or 150, and Economics 201 or Mathematics 119, (25-27 units). These prerequisite courses may not be taken Cr/NC; the minimum grade in each class is C-

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 40 upper division units to include Accountancy 310, 321, 323, 325, 327, 423, Management 301 or 302, 350, 405, Marketing 370, Economics 490; at least three units selected from Finance 329 and 425, and three units of electives selected from Business Administration. A minimum of 62 units of course work applicable to the bachelor’s degree must be completed outside the areas of business administration and economics.

Real Estate Major

With the B.S. Degree in Business Administration

Preparation for the major. Accountancy 210A-210B or 212; Finance 140, Information Systems 180, 290; Economics 101 and 102; Economics 201 or Mathematics 119, and Mathematics 120 or 150, (25-27 units). These prerequisite courses may not be taken Cr/NC; the minimum grade in each class is C-. 

GRADUATE COURSES IN ACCOUNTANCY
Refer to the Graduate Bulletin.
Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 39-40 upper division units to include Finance 323, 331, 335, 433, 437; Management 301 or 302, 350, 405; Marketing 370; Public Administration 320; and 9-10 units selected from Accountancy 315, 410; Finance 332, 431, 435, Marketing 372, Economics 422, 490; Geography 354, 559. A minimum of 52 units of course work applicable to the bachelor's degree must be completed outside the areas of business administration and economics.

Business Major*

For the Single Subject Teaching Credential

All candidates for the single subject teaching credential in business must complete all requirements for the applicable specialization as outlined in this section of the catalog under Title III of the College of Business Administration. Students must complete the requirements of a major in one of the five departments within the College of Business Administration in consultation with the Coordinator of Teacher Education in the College of Business Administration. Undergraduate students shall develop programs which fulfill the State credential requirements. All undergraduate majors must demonstrate typing proficiency. Finance 389, Personal Financial Planning, is required of all teaching credential majors.

*The major for the Single Subject Teaching Credential has been submitted to the Commission on Teacher Credentialing. Consult department to verify current program requirements.

Finance Minor

The minor in finance consists of a minimum of 19 units to include Accountancy 210A-210B or 212, Finance 321, 323, 327, and 329; Mathematics 119.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

Insurance Minor

The minor in insurance consists of a minimum of 15 units to include Finance 140, 342, 521, 523, and three additional upper division units in business administration with consent of insurance adviser.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

Real Estate Minor

The minor in real estate consists of a minimum of 18 units to include Economics 102; Finance 140, 331, 335, 433; and three units selected from Finance 333, 431, and 437.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

LOWER DIVISION COURSE IN FINANCE

140. Business Law (3) I, II
Introduction to legal institutions; nature and sources of law; the judicial system; legal concepts and cases involving contracts, agency, and sales.

UPPER DIVISION COURSES IN FINANCE

321. Managerial Economics (3) I, II
Prerequisite: Completion of lower division course requirements in major or minor. Role of economic analysis in management decisions. Study of demand, cost, supply theories from a business viewpoint. Emphasis on managerial decision making.

323. Fundamentals of Finance (3) I, II
- Prerequisite: Completion of lower division course requirements in major or minor.
- Objectives of financial management. Financing the business enterprise. Internal financial management. Introduction to the cost of capital, valuation, dividend policy, leverage and the techniques of present value and its applications. Sources of capital.

325. Planning of Capital Expenditures (3) I, II
- Prerequisites: Finance 323 and Management 301 or 302.

326. Financial Institutions Management (3)
- Prerequisite: Finance 323.
- Management of financial institutions including savings and loan associations, mutual savings banks, credit unions, private pension plans, brokerage houses, investment companies, consumer credit institutions, federal credit agencies, and commercial banks. Emphasis on internal financial management of these institutions.

327. Investments (3) I, II
- Prerequisite: Finance 323.
- Investment principles and practices with emphasis on problems of the small investor, such as tests of a good investment, sources of information, types of stocks and bonds, mechanics of purchase and sale, investment trusts, real estate mortgages, and the like.

329. International Business Finance (3) I, II
- Prerequisite: Finance 333.
- The financing of international business transactions; international payments and their environments; international financial institutions.

331. Real Estate Essentials (3) I, II
- Prerequisite: Completion of lower division course requirements in business major or minor.
- Fundamental operations of the real estate market; principles of real property valuation; financing, law, investment, brokerage, management, and development. (Formerly numbered Finance 331.)

333. Law of Real Property (3) I, II
- Prerequisite: Finance 331.
- Legal theory and practice of estates in land; landlord and tenant relationships; land transactions; mortgages and trust deeds; easements; land use; ownership rights in land; environmental law.

335. Land Markets and Real Estate Analysis (3) I, II
- Prerequisite: Finance 331.

340. Advanced Business Law (3) I, II
- Prerequisite: Finance 140, accounting major.
- Legal concepts and cases involving business organization, negotiable instruments, property, security devices, creditors' rights, bankruptcy, insurance, wills, trusts, estates, and suretyship. Special emphasis on problem-solving techniques. Not open to students with credit in Finance 141.

341. Law in a Business Society (3) I, II
- Prerequisite: Finance 140.
- The nature of law as a process of resolving economic disputes and social conflicts. Analysis of the rationale in statutes, judicial decisions, and doctrine. The role of law in the development of business concepts.

342. General Insurance (3) I, II
- History of insurance; economic and social implications; principles of insurance contracts; theory of risk; law of large numbers. Survey of all major insurance fields and policies including life, fire, marine, inland marine, casualty and surety bonding.
389. Personal Financial Planning (3)
Functions and responsibilities of consumers; problems of choice making; planning expenditures for housing, household operation, insurance and investments. Economics of installment buying, borrowing procedures, control of frauds, legislation affecting consumers. (Formerly numbered Business Administration 389.)

421. Security Analysis and Investment Strategies (3) I, II
Prerequisite: Finance 327.

423. Financial Analysis and Management (3) I, II
Prerequisites: Finance 325 and Economics 490.
Integration of various aspects of finance, application of financial theory, financial decision-making in the firm.

425. Business Forecasting (3) I, II
Prerequisites: Finance 323, Management 301 or 302, and Marketing 370.
Business fluctuations, forecasting, and related problems confronting the business firm; forecasting techniques; specific forecasts. The use of forecasts in the firm.

431. Real Estate Finance (3) I, II
Prerequisite: Finance 331.
Methods of financing real estate; sources of real estate credit; loan servicing; governmental financial agencies; acquisition and sale of mortgages and trust deeds.

433. Theory of Real Property Value (3) I, II
Prerequisite: Finance 335.
Introduction to theories of real property value; techniques of value determination; data analysis techniques.

435. Income Real Estate Analysis (3)
Prerequisite: Finance 433.
Analysis of income-producing real estate in order to establish its value for investment and financing purposes.

437. Housing: Policy and Analysis (3) I, II
Prerequisite: Finance 331.
Entrepreneurial behavior in the housing sector; housing market analysis; public policy and social aspects of housing; community and environmental factors.

445. Estate Planning (3) I, II
Prerequisite: Consent of Department Chair.
Introduction to estate planning; family and social aspects of estate planning; wills, trusts, and business succession; income and gift taxes; state and local taxation; estate administration; life insurance; and business reorganization and liquidation procedures.

496. Selected Topics in Finance (1-4) I, II
Prerequisite: Consent of Department Chair.
Selected areas of concern in finance. See Class Schedule for specific content. May be repeated with new content with consent of Department Chair. Limit of nine units of any combination of 496, 498, 596 courses applicable to a bachelor's degree. Maximum credit six units.

498. Investigation and Report (1-3) I, II
Prerequisites: Senior standing and consent of instructor.
A comprehensive and original study of a problem connected with finance under the direction of one or more members of the finance staff.
Information Systems

Faculty
Emeritus: Archer, Gibson, Langenbach, LeBarron, Straub
Chair: Sondak
Professors: Crawford, Sondak, Spaulding
Associate Professors: Feeney, Flattery, Hatch, Perry, Saraswat, Vik
Assistant Professor: Van Zandt
Lecturers: Koster, Saltzer

Offered by the Department
Master of Science degree in business administration.
Master of Business Administration.
Major in information systems with the B.S. degree in business administration.
Teaching major in business for the single subject teaching credential.
Minor in information systems.

Information Systems Major
With the B.S. Degree in Business Administration

Preparation for the major. Accountancy 210A-210B or 212. Finance 140. Information Systems 180, 280, 290; Economics 101 and 102; Mathematics 120 or 150; and Economics 201 or Mathematics 119. (28-30 units.) These prerequisite courses may not be taken with the B.S. Degree in Business Administration.

Information Systems Minor

Information Systems Minor

Business Major*
For the Single Subject Teaching Credential
All candidates for the single subject teaching credential in business must complete all requirements for the applicable specialization as outlined in this section of the catalog under the College of Education. Students must complete the requirements of a major in one of the five departments within the College of Business Administration. In consultation with the Coordinator of Teacher Education in the College of Business Administration, undergraduate students shall develop programs which fulfill the State credential requirements. All undergraduate majors must demonstrate typing proficiency. Finance 289, Personal Financial Planning, is required of all teaching credential majors.

*The major for the Single Subject Teaching Credential has been submitted to the Commission on Teacher Credentialing. Consult department to verify current program requirements.

Information Systems Minor
The minor in information systems consists of a minimum of 21 units to include Information Systems 180, 280, 290, 381, 384, 480, and three units selected from Information Systems 383, 388, 396W, 482, 484, 486.

LOWER DIVISION COURSES IN INFORMATION SYSTEMS

180. Principles of Information Systems (3)
Introduction to business data processing applications. Basic concepts of computer organization. Flowcharting and programming in a computer language to solve typical business problems.

280. COBOL Programming (3)
Prerequisite: Information Systems 180
Introduction to COBOL programming. Emphasis on coding techniques, file organization, and report preparation.

290. Written Communications in Business (3)
Principles of effective writing applied to business and industrial situations and to the organization and presentation of reports.

UPPER DIVISION COURSES IN INFORMATION SYSTEMS

(Initended for Undergraduates)

380. Information Systems Analysis and Design (3)
Prerequisite: Completion of lower division courses required in the major or minor.
Concepts and techniques for the analysis, design, and implementation of computer-based information systems.

381. Assembly Language for Business Applications (3)
Prerequisite: Completion of lower division courses required in the major or minor.
Assembly language programming and computer organization for business applications.

382. Information Systems Analysis (3)
Prerequisites: Information Systems 180 and a minimum of three upper division units in the student's major or minor.
Characteristics of computer-based information systems in business. Includes general systems theory and techniques of analysis, design, and implementation. Emphasis on application to fields of accounting, marketing, finance, and management. Not open to students with credit in Information Systems 380.

383. Advanced COBOL Programming (3)
Prerequisite: Information Systems 280.
Advanced COBOL programming emphasizing documentation standards and program efficiency.

384. Comparative Programming Languages (3)
Prerequisite: Information Systems 280.
Comparative study and evaluation of programming languages in the business context. Examples of business applications using programming languages such as PL/I, RPGII, Pascal, and APL.

387. Information and Records Management (3)
Establishment, implementation, and maintenance of records control programs in all types of organizations. Examples of modern methods for control and organization of records. Study of organization and operation of data processing units at the local, state, regional, and national levels.

388. Automated Administrative Systems (3)
Prerequisite: Information Systems 380
Computer as an information and symbol processor, text data storage and representation, non-numeric programming, text editors and output processors, minis- and micro-computer implementations. Word processing system design and evaluation.

396W. Report Writing (3)
Prerequisite: Information Systems 290
Advanced study of preparation of analytical and technical reports used in business and other organizations. Includes individualized study of reports in student's career field. Satisfies University upper division writing requirement for students who have completed 60 units, fulfilled the Writing Competency Requirement, and completed the General Education requirement in Written Communication. (Formerly numbered Business Administration 393.)
460. Data Management Systems (3)
Prerequisite: Information Systems 380
Principles of data base systems design: File creation, organization, and maintenance. Evaluation of current data base management systems.

482. Data Processing Practicum (3) Cr/NC
Prerequisites: Information Systems 380 and six additional upper division units in information systems.
Fundamentals of systems flow charting and computer programming: computer applications to typical automated data processing problems.

484. Data Communication (3)
Principles of data communication networks: data transmission, information flow and control, message switching, systems networking, distributed data processing.

485. Operating Systems Analysis (3)
Prerequisite: Information Systems 361. Batch and interactive processing, storage management, file structures, and current operating systems for business data processing.

486. Advanced Systems Analysis and Design (3)
Prerequisite: Information Systems 380. Application of concepts and techniques for design, development, and implementation of computer-based information systems. Examples of applications from current business environments including distributed systems, data bases, and data communication systems.

490W. Report Writing for Accountants (3)
Prerequisite: Twelve upper division units in accounting. Advanced report writing with application to the professional needs of accountants. Satisfies University upper division writing requirement for students who have completed 60 units, fulfilled the Writing Competency Requirement, and completed the General Education requirement in Written Communication.

496. Selected Topics in Information Systems (1-4) I, II
Prerequisite: Consent of Department Chair.
Selected areas of concern in information systems. See Class Schedule for specific content. May be repeated with new content with consent of Department Chair. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units.

498. Investigation and Report (1-3) I, II
Prerequisites: Senior standing and consent of instructor. May be repeated with new content. Maximum credit six units.
A comprehensive and original study of a problem connected with information systems under the direction of one or more members of the information systems staff.

GRADUATE COURSES IN INFORMATION SYSTEMS
Refer to the Graduate Bulletin.

Management

Faculty
Emeritus: Pierson, Srbich
Chair: Beatty
Professors: Atchison, Beatty, Belasco, Belcher, Chen, Gadon, Galbraith, Ghorade, Hampton, Milton, Peters, Robbins, Sherratt, Utenman
Associate Professors: Jannar, Lackritz, Nebeker, Wright
Assistant Professors: Brady, N., Castaldi, De Noble
Lecturers: Brady, S., Foote, Omens

Offered by the Department.
Master of Science degree in business administration.
Master of Business Administration.
Major in management with the B.S. degree in business administration.
Teaching major in business for the single subject teaching credential.
Minor in business management.
Minor in personnel and industrial relations.
Minor in production and operations management.

Management Major
With the B.S. Degree in Business Administration

The major in management is a flexible program which allows the student to specialize in two areas of study in the major or to obtain a broad background in management with a specialization in one of the areas of study within the major.

(1) Professional Curriculum Within the Major Field
Preparation for the major. Accountancy 210A-210B or 212; Finance 140; Information Systems 180, 290; Economics 101 and 102; Mathematics 119, and Mathematics 120 or 150. (25-27 units.) These prerequisite courses may not be taken Cr/NC; the minimum grade in each class is C-.

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. Accountancy 315; Finance 323; Management 301 or 302, 350, 351, 352, 356, 360, 405; Marketing 370. (31 units.)

(2) Areas of Specialization Within the Major Field
Select 12 units from Management 366, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468. (Six units must be within one of the areas below.)
(a) Personnel and Industrial Relations: Management 452, 453, 460.
(b) Production and Operations Management: Management 461, 462.
(c) Organizational Behavior: Management 451, 454.
(d) Statistics and Management Science: Management 366, 463, 464.
(e) Business Environment: Management 455, 456.
(f) Strategic, General, and International Management: Management 450, 457, 458, 459, 465, 466, 467.

(3) Pattern Requirements Outside the Department of Economics and the College of Business Administration

A minimum of 52 units of course work applicable to the bachelor's degree must be completed outside the areas of business administration and economics.

Business Major*

For the Single Subject Teaching Credential

All candidates for the single subject teaching credential in business must complete all requirements for the applicable specialization as outlined in this section of the catalog under
the College of Education. Students must complete the requirements of a major in one of the five
departments within the College of Business Administration. In consultation with the Coordinator
of Teacher Education in the College of Business Administration, undergraduate students shall
develop programs which fulfill the State credential requirements. All undergraduate majors
must demonstrate typing proficiency. Finance 389, Personal Financial Planning, is required of
all teaching credential majors.

“The major for the Single Subject Teaching Credential has been submitted to the Commis-
sion on Teacher Credentialing. Consult department to verify current program requirements.

Business Management Minor

The minor in business management consists of a minimum of 22 units to include Economics
101 and 102; Accountancy 210A-210B or 212; Management 350; and nine units selected from
Management 351 or 352, 356, 360.

Courses in the minor may not be counted toward the major, but may be used to satisfy
preparation for the major and general education requirements, if applicable.

Personnel and Industrial Relations Minor

The minor in personnel and industrial relations consists of a minimum of 22 units to include
Economics 101 and 102; Accountancy 210A-210B or 212; Management 350, 352; and six units
selected from Management 351, 452, 453, 460.

Courses in the minor may not be counted toward the major, but may be used to satisfy
preparation for the major and general education requirements, if applicable.

Production and Operations Management Minor

The minor in production and operations management consists of a minimum of 22 units to
include Economics 101 and 102; Accountancy 210A-210B or 212; Management 301 or 302,
350, 360; and three units selected from Management 306, 461, 462.

Courses in the minor may not be counted toward the major, but may be used to satisfy
preparation for the major and general education requirements, if applicable.

LOWER DIVISION COURSE IN MANAGEMENT

150. The Business Enterprise (3) I, II

The business enterprise and its function in society, interrelations of ownership, entrepre-
 neurship, and administration, interactions within the firm and within and among industries.

UPPER DIVISION COURSES IN MANAGEMENT

(Intended for Undergraduates)

301. Statistical Analysis for Business (3) I, II

Prerequisites: Mathematics 120; Economics 201 or Mathematics 119. Statistical methods applied to business decision making.

302. Quantitative Methods (3)

Prerequisites: Mathematics 120; Economics 201 or Mathematics 119. A study of various management science techniques such as simulation, transportation and simple linear programming and queuing theory.

350. Management and Organization (3) I, II

Prerequisite: Completion of lower division courses required in the major or minor. Concepts of organizing activities to achieve goals. Effects of environment, technology and human behavior on organization design. Managerial processes including planning, decision making, influence and control required to operate and change organizations.

351. Organizational Behavior (3) I, II

Prerequisite: Management 350. Human behavior in organizations at the individual, interpersonal and group level including the effect of organization structure on behavior. Emphasis on managerial behavior as it relates to human motivation, influence, leadership, communication, group dynamics and conflict resolution.

352. Personnel and Industrial Relations (3) I, II

Prerequisite: Management 350. Management of human resources including manpower planning and staffing, training and development, performance appraisal, compensation and union-management relations. Emphasis on effect of economic, sociological and psychological factors on concepts and practices.

356. The Corporation in Modern Society (3)

Prerequisite: Management 350. Impact of the corporation in contemporary American life. Emphasis on examining major social issues of corporate-society interaction, and on the social responsibilities of corporations.

360. Fundamentals of Production and Operations Management (3) I, II

Prerequisite: Management 350. Role of the operations function in the organization. Study of production and operations organizations, Systems analysis, facilities planning, competitive bidding, methods and scheduling and control models.

365. Statistical Methodology for Business Research (3)

Prerequisite: Management 301. Design and application of quantitative methods related to business research, with an applied emphasis on factorial analysis of variance, covariance, experimental design, multiple regression, research reporting, and analysis of methodology appearing in business literature.

405. Business Strategy and Integration (3) I, II

Prerequisites: Management 301 or 302, 350 and Marketing 370. Integration of principles and concepts from all fields of business administration. Emphasis on interaction of disciplines for effective strategy and establishment of top management policy through a combination of case study and a business simulation game.

450. Venture Management (3)


451. Organization Theory and Analysis (3)

Prerequisite: Management 351. Organizations as systems. Analysis of the impact of technological, structural and adminis-
trative factors on management.

452. Wage and Salary Administration (3) I, II

Prerequisite: Management 352. Major problems in the determination and control of compensation from employment. Comparison of underlying theory to current practice.

453. Union-Management Relations (3) I, II

Prerequisite: Management 352. Relationships and interactions among unions, workers, and management. Emphasis on unionization, collective bargaining and central administration, interaction of union and manage-
ment relative to society.

454. Interpersonal Processes (3)

Prerequisite: Management 351. Interpersonal aspects of management. Interpersonal perception, communication, group dynamics, and influence from a managerial perspective.

455. American Business History (3)

456. Conceptual Foundations of Business (3) I, II
Prerequisite: Senior standing.
Interdisciplinary study of the foundations of business values and their evolution. The institution of business in the American experience expressed in the impact of business on overall goals, values, and behavior; public, corporate and private.

457. Applications in Management (1-3) I, II
Prerequisites: Senior standing and consent of instructor.
Developing specific skills in areas of management.

458. Management Decision Games (1-3) I, II
Prerequisite: Consent of instructor.
Integrated managerial decision making within a dynamic environment through the use of business games.

459. Strategic Management of Not-For-Profit Organizations (3)
Prerequisite: Management 405
Use of the latest managerial techniques for the strategic formulation and implementation of Not-for-Profit institutions such as foundations, schools, etc. Substitute measurements of success of objectives where no normal profits appear.

460. Personnel Staffing and Development (3) I, II
Prerequisite: Management 352.
Design of personnel activities for matching people and jobs. Includes development of techniques for personnel planning, staffing, appraisal, and development. Environmental constraints including legal and market forces.

461. Systems and Methods Analysis (3) I, II
Prerequisite: Management 360.
Examination of systems approach as applied to methods analysis and work measurement. Modeling, analysis, synthesis, and management of systems. Analysis of case studies.

Prerequisites: Management 301 or 302, and 360.
Problems in the design of single- and multiple-product integrated production and inventory control systems. Detailed and aggregate scheduling of operations under deterministic and stochastic demand conditions.

463. Management Science: Deterministic Systems (3)
Prerequisite: Management 302.
Derivation and application of optimization techniques for deterministic systems. Linear programming, nonlinear dynamic and integer programs.

464. Management Science (3)
Prerequisite: Management 302.
Study of current applications of operations research techniques to the solution of business and industrial problems. Readings, projects, cases, and field work as appropriate.

465. Formal Planning Systems (3)
Prerequisite: Management 405.
Theory and practice of formalized, systematic corporate and divisional planning, nature of the planning process, role of the corporate planner, models and techniques of planning, design and implementation of formal planning systems.

466. International Business Strategy and Multinational Enterprises (3)
Prerequisite: Management 405.
Business activities across national boundaries, including strategies, policies, risks, organizing, directing and controlling. Cases, readings and directed study of various developed and developing countries.

467. Negotiation Management (3) II
Prerequisite: Management 405.
Negotiation related to management of a strategy. Exchange of ideas with intention of changing relationships, as in acquiring, divesting, purchasing, hiring, training, merging, and evaluating.

468. Women In Management (3) I, II
Prerequisite: Management 350.
Personal and organizational issues women face at work in both manager and worker roles. Barriers, strategies, conflict, male/female dynamics. Practice and skill building for effective managing.

496. Selected Topics in Management (1-4) I, II
Prerequisite: Consent of Department Chair.
Selected areas of concern in management; see Class Schedule for specific content. May be repeated with new content with consent of Department Chair. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units.

498. Investigation and Report (1-3) I, II
Prerequisites: Senior standing and consent of instructor.
May be repeated with new content. Maximum credit six units.
A comprehensive and original study of a problem connected with management under the direction of one or more members of the management staff.

GRADUATE COURSES IN MANAGEMENT
Refer to the Graduate Bulletin.
Marketing

Faculty
Emeritus: Akers, Darley
Chair: Vanier
Professors: Barber (Associate Dean, Graduate Studies), Belch, M., Haas, Hale, Heba
(Visting Professor), Lindgren, McCaff, Sciglimpaglia, Settle, Vanier, Wotruba
Associate Professors: Belch, G., Kallis, Tyagi
Assistant Professors: Krentier, Villareal-Camacho
Lecturer: Blanchette

Offered by the Department
- Master of Science degree in business administration.
- Master of Business Administration.
- Major in marketing with the B.S. degree in business administration.
- Teaching major in business for the single subject teaching credential.
- Minor in marketing.

Marketing Major

With the B.S. Degree in Business Administration

Preparation for the major: Accountancy 210A-210B or 212; Finance 140; Information Systems 160, 290; Economics 101 and 102; Mathematics 120 or 150; and Economics 201 or Mathematics 119. (25-27 units.) These prerequisite courses may not be taken Cr/NC; the minimum grade in each class is C-.

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 37 upper division units to include Finance 323, Management 301, 350, 405, Marketing 370, 371, 470, 471, 479. Twelve units selected from Marketing 372, 373, 374, 375, 376, 472, 473, 474, 475, 476, and 477. A minimum of 32 units of course work applicable to the bachelor's degree must be completed outside the areas of business administration and economics.

Business Major

For the Single Subject Teaching Credential

All candidates for the single subject teaching credential in business must complete all requirements for the applicable specialization as outlined in this section of the catalog under the College of Education. Students must complete the requirements of a major in one of the five departments within the College of Business Administration. In consultation with the Coordinator of Teacher Education in the College of Business Administration, undergraduate students shall develop programs which fulfill the State credential requirements. All undergraduate majors must demonstrate typing proficiency. Finance 389, Personal Financial Planning, is required of all teaching credential majors.

*The major for the Single Subject Teaching Credential has been submitted to the Commission on Teacher Credentialing. Consult department to verify current program requirements.

Marketing Minor

The minor in marketing consists of a minimum of 20 units to include Accountancy 210A, Marketing 370; Economics 102; and 12 units selected from Management 301, Marketing 371, 372, 373, 374, 375, 376, 470, 472, 473, 474, 475, 476, and 477.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

UPPER DIVISION COURSES IN MARKETING

(Intended for Undergraduates)

370. Marketing (3) I, II
Prerequisite: Completion of all lower division course requirements for the major or minor. Function of marketing in the organization and in society. Topics include market analysis and consumer behavior, product planning, pricing, promotion, distribution, and international marketing.

371. Consumer Behavior (3) I, II
Prerequisite: Marketing 370.
Examination of the nature of markets and of the factors influencing market development and change. Study of the individual consumer's behavior in relation to the selling-buying process.

372. Retailing Principles (3) I, II
Prerequisite: Marketing 370.
Study of retail stores, emphasizing the problems of store managers and merchandising executives; store location, organization, personnel, sales promotion, buying and handling of merchandise, inventory, turnover, and control methods. Problems of profitable operation under changing conditions.

373. Marketing Communication and Promotion (3)
Prerequisite: Marketing 370.
Management of the marketing communications function. Topics include advertising theory and measurement, communications theory, promotional strategies, public relations and publicity; consumer behavior and analysis; and consumer education and promotional ethics.

374. Physical Distribution Management (3)
Prerequisite: Marketing 370.
Physical distribution organization and functions. Economic and operational characteristics of modes of transportation, documentation, terminal operations, materials handling, claims management, and government regulations.

375. Purchasing and Buying (3) I, II
Prerequisites: Management 350 and Marketing 370.
Policies for purchasing raw materials, parts, supplies and finished goods for manufacturing operations, for commercial uses, and for wholesale and retail resale. Buying procedures, inventory and control, vendor relations, legal problems, quality control, financing.

376. International Marketing (3) I, II
Prerequisite: Marketing 370.
Marketing in an international setting. Topics include entry strategies, importing-exporting, barter, channel selection, transfer pricing, advertising and selling differences, and the external environment within which the marketing manager operates.

470. Marketing Research (3) I, II
Prerequisites: Management 301 and Marketing 370.
Methods and procedures used to generate and interpret information for marketing decision making. Topics include problem analysis, sources of information, alternative research designs, data collection, analysis and interpretation.

471. Marketing Research Project (1) I, II
Two hours of activity.
Prerequisite: Marketing 470.
Application of marketing research techniques to specific topics. Design, implementation and analysis of a marketing research study. Use of computerized statistical methods for data analysis.

472. Advertising Management (3)
Prerequisites: Marketing 371 and 373.
The management of the advertising and sales promotion function.

473. Sales Management (3) I, II
Prerequisite: Marketing 370.
Consideration of the structure of sales organization; sales policies; selection, training, compensation, evaluation and control of the sales force; sales analysis; sales quotas; sales costs and budgets; market and product research and analysis; coordination of personal selling with other forms of sales effort.
474. Industrial Marketing (3) I, II
Prerequisites: Management 350 and Marketing 370.
Study of industrial products and services and how they are marketed; classifications of industrial products and customers; buying procedures; applications of marketing research; analysis of industrial product planning; industrial channels of distribution; industrial promotion applications and pricing practices.

475. Marketing Problems (3) I, II
Prerequisite: Marketing 370.
Complex cases in marketing involving analysis of business situations.

476. Advanced Marketing Research (3) I, II
Prerequisite: Marketing 470.
Marketing research methods. Analysis and interpretation of data generated by research. Topics in survey methods and statistical analysis. Use of computerized statistical methods such as cross-tabulation, analysis of group differences, correlation and multivariate analysis.

477. Marketing Nonprofit Organizations and Social Causes (3) I, II
Prerequisite: Marketing 370.
Marketing in nonprofit organizations and other nontraditional situations. Application of marketing techniques to development of marketing programs in such institutions.

478. Marketing Management (3) I, II
Prerequisites: Marketing 371 and 470.
Planning and implementing marketing strategy by integrating the specific elements in the marketing function. The application of the appropriate decision techniques in developing the overall marketing mix and in solving marketing problems.

496. Selected Topics in Marketing (1-4) I, II
Prerequisite: Consent of Department Chair.
Selected areas of concern in marketing. See Class Schedule for specific content. May be repeated with new content with consent of Department Chair. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units.

498. Investigation and Report (1-3) I, II
Prerequisites: Senior standing and consent of instructor.
May be repeated with new content. Maximum credit six units.
A comprehensive and original study of a problem connected with marketing under the direction of one or more members of the marketing staff.

GRADUATE COURSES IN MARKETING
Refer to the Graduate Bulletin.

Chemistry
In the College of Sciences
The department is on the approved list of the American Chemical Society

Faculty
Emeritus: Harrington, Isensee, Joseph, Robinson, Rowe, Spangler, Wick
Chair: Roeder
Professors: Abbott, Bennett, Cobble, Coffey, Dahms, Grubbs, Hellberg, Jansen, Jones, Landis, Laub, Lebherz, Malik, Malley, Mathewson, O'Neal, Richardson, Ring, Roeder, Sharts, Stewart, Wadsworth, Walba, Woodson
Associate Professors: Chatfield, Stumph
Lecturers: Crabtree, O'Neal

Offered by the Department
Doctor of Philosophy degree in chemistry.
Master of Arts degree in chemistry.
Master of Science degree in chemistry.
Major in chemical physics with the B.S. degree in applied arts and sciences.
Major in chemistry with the B.S. degree in applied arts and sciences with the Certificate of the American Chemical Society.
Major in chemistry with the A.B. degree in applied arts and sciences, with or without the Certificate of the American Chemical Society.
Single subject teaching credential in physical sciences in the area of chemistry.
Minor in chemistry.

Chemical Physics Major
With the B.S. Degree In Applied Arts and Sciences
All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements." A minor is not required with this major.

Preparation for the major. Chemistry 200, 201, 231, and 251; Mathematics 150, 151 and 152; Physics 195, 195L, 196, 196L, 197, 197L (44 units)

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.


Chemistry Majors
In Applied Arts and Sciences
Three majors in chemistry are offered in applied arts and sciences, as follows:
(1) Chemistry major with the B.S. degree and Certificate of the American Chemical Society, a program designed to qualify graduates for many types of positions as chemists and for admission to graduate work in chemistry;
(2) Chemistry major with the A.B. degree and Certificate of the American Chemical Society, a program designed to prepare students for graduate work in chemistry, and
(3) Related Professions major, a program available only to students who are taking a premedical or preclinical curriculum.

Certificate of the American Chemical Society
The Department of Chemistry is on the approved list of the American Chemical Society. Programs leading to a chemistry major with the B.S. degree or the A.B. degree are designed to meet the standards prescribed for the Certificate of the American Chemical Society. The program leading to the Related Professions major is not offered with the Certificate.
Chemistry Major
With the B.S. Degree in Applied Arts and Sciences and Certificate of the American Chemical Society

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements." A minor is not required with this major.

The curriculum outlined below for the B.S. degree in applied arts and sciences is based upon the recommendations of the Committee for Professional Training of Chemists of the American Chemical Society. It qualifies graduates for many types of positions as chemists and provides the training required by most universities for admission to graduate work in chemistry.

Preparation for the major: Chemistry 200, 201, 231, 237, and 251, Mathematics 150, 151, and 152, and Physics 195, 195L, 196, 196L, 197, 197L (45 units).

Upper Division Writing Requirement. Passing the University Writing Examination or screening in Chemistry 457A or 457B.

Major: A minimum of 36 upper division units to include Chemistry 407, 410A-410B, 431, 437, 457A-457B, 520A, 550, 560A, one unit of 498, and 11 units of upper division electives in chemistry. Six of the 11 units may be in related subjects with the approval of the department.

OUTLINE FOR THE B.S. DEGREE AND CERTIFICATE

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** Refer to catalog section on General Education requirements. The department strongly recommends that students take German 101 and 102 for seven units of credit under the Humanities section of General Education.
† Some students will be required to take Mathematics 104 or 140 or both in their first semester because of their performance on the mathematics placement examination. The appropriate number of units should then be subtracted from General Education.
‡ Students are advised to choose the appropriate course in the Humanities or Social Science sections of General Education to meet half of this six-unit requirement. If this requirement is met entirely by examination, add three units to General Education and three units to General Electives.

Emphasis in Biochemistry

Preparation for the major: Chemistry 200, 201, 231, 237, 251; Mathematics 150, 151, 152; Physics 195, 195L, 196, 196L; Botany 200; and Zoology 200 (49 units). Physics 197, 197L strongly recommended.

Upper Division Writing Requirement. Passing the University Writing Examination or screening in Chemistry 457A or 457B.

Chemistry Major
With the A.B. Degree in Applied Arts and Sciences and Certificate of the American Chemical Society

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements." A minor is not required with this major.

Preparation for the major: Chemistry 200, 201, 231, 237, and 251; Mathematics 150, 151, and 152; and Physics 195, 195L, 196, 196L, 197, 197L (45 units).

Upper Division Writing Requirement. Passing the University Writing Examination or screening in Chemistry 457A or 457B.

Major: A minimum of 25 upper division units in chemistry to include Chemistry 407, 410A-410B, 431, 437, 457A-457B, 520A, 550; one unit of 498; and three units of upper division electives in chemistry to be selected from Chemistry 510, 520B, 530, 537, 560A.

OUTLINE FOR THE A.B. DEGREE AND CERTIFICATE

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** Chemistry 407 may be substituted for Biology 215 as a prerequisite for Biology 503.
† Refer to catalog section on General Education requirements. The department strongly recommends that students take German 101 and 102 for seven units of credit under the Humanities section of General Education.
‡ Students eligible to take Mathematics 150 in their first semester should do so and substitute for Mathematics 104 or 140 in the five units of general electives.
§ Students are advised to choose the appropriate course in the Humanities or Social Science sections of General Education to meet half of this six-unit requirement. If this requirement is met entirely by examination, add three units to General Education and three units to General Electives.

Chemistry Major
With the A.B. Degree in Applied Arts and Sciences

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."

This plan is designed for only those students who desire the training in a premedical or...
predental curriculum. This plan cannot be taken by students who intend to become professional chemists or who intend to earn advanced degrees in chemistry or who plan to teach in community colleges. Application for admission to the plan must be made to the department chairman upon achieving junior class standing. All transfer students with upper division standing must apply before the second semester of work at San Diego State University. With an appropriate choice of electives, graduates can meet the requirements for admission to medical, dental, and pharmaceutical schools.

Preparation for the major. Chemistry 200, 201, 231, 237, 250; Physics 195, 195L, 196, 196L; Mathematics 104, 140 (unless exempted by examination), 150, 151; Botany 200; and Zoology 200. (50 units.)

Upper Division Writing Requirement. Passing the University Writing Examination or screening in Chemistry 457A or 457B.

Major. A minimum of 24 upper division units in chemistry to include either Chemistry (310A-310B, 431, 577, ten units of electives in chemistry) or (407, 410A-410B, 431, 457A-457B, 550, seven units of electives in chemistry). Chemistry 361A-361B or 560A-560B is recommended for all premedical students.

Minor. A minor in biology or zoology is expected for preprofessional students.

Chemistry Major*

For the Single Subject Teaching Credential in Physical Sciences

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the College of Education.

All candidates for a teaching credential must complete all requirements for a chemistry major for either the A.B. or the B.S. degree in Applied Arts and Sciences and must satisfy the requirements for a Physical Science Major for the Single Subject Teaching Credential in Physical Science as listed under the Natural Science Department.

*The major for the Single Subject Teaching Credential has been submitted to the Commission on Teacher Credentialing. Consult department to verify current program requirements.

Chemistry Minor

The following courses are prerequisite to the chemistry minor and do not count toward the 15 units required for the minor: Chemistry 200, 201, 210. (10 units.)

The minor in chemistry consists of 15 units in chemistry to include Chemistry 230 or 231, and 250, and six units of upper division electives. Chemistry 410A-410B** are strongly recommended.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

** Additional prerequisites in mathematics and physics required for these courses.

Graduation with Distinction

A student desiring to graduate with Distinction in Chemistry must meet the university requirements listed in the section of this catalog on "Graduation Requirements" and in addition have completed four units of Chemistry 498 by the time of graduation and be recommended by the faculty member directing the Chemistry 498 project.

LOWER DIVISION COURSES

100. Introduction to General Chemistry with Laboratory (4) I, II
Three lectures and three hours of laboratory.
Prerequisite: Chemistry 201.
Elementary principles of chemistry used to illustrate nature and development of modern scientific thought. Not open to students with credit in Chemistry 200.

107. Glass Blowing (1)
Three hours of laboratory.
Prerequisite: Chemistry 201.
Elementary training in the manipulation of glass.

110. Chemistry and Life (3)
Chemistry of biological processes for the non-science major. Basic concepts in chemistry that provide the chemical basis for understanding the nature of life.

130. Elementary Organic Chemistry (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Chemistry 100 or 200.
Introduction to the compounds of carbon including both aliphatic and aromatic substances. Not open to students with credit in Chemistry 201 or 202.

160. Introductory Biochemistry (3) I, II
Prerequisite: Chemistry 130.
Fundamental principles of the chemistry of living processes. This course intended primarily for majors in home economics, nursing, and related fields.

200. General Chemistry (5) I, II
Three lectures and six hours of laboratory.
Prerequisites: High school chemistry or a grade of "C" or better in Chemistry 100, and two years of high school algebra or equivalent.

General principles of chemistry with emphasis on inorganic materials. Students with credit for both Chemistry 100 and 200 will receive a total of 5 units of credit toward graduation.

201. General Chemistry (5) I, II
Three lectures and six hours of laboratory.
Prerequisite: Chemistry 200.
Continuation of Chemistry 200. General principles of chemistry with emphasis on inorganic materials and qualitative analysis. Duplicate credit will not be allowed for the corresponding course in Chemistry 202.

202. General Chemistry for Engineers (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Chemistry 200.
A continuation of the study of the principles of chemistry with emphasis on the relationships to the field of engineering. Open only to engineering majors. Not open to students with credit in Chemistry 201.

230. Introductory Organic Chemistry (4) I, II
Three lectures and three hours of laboratory.
Prerequisite: Chemistry 201.
Aliphatic and aromatic compounds including reaction mechanisms. For students needing only one semester of organic chemistry. Not open to students with credit in Chemistry 231.

231. Organic Chemistry (4) I, II
Three lectures and three hours of laboratory.
Prerequisite: Chemistry 201.
Properties and synthesis of organic compounds including reaction mechanisms. First half of a year course. Not open to students with credit in Chemistry 230.

237. Organic Chemistry Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Open only to students enrolled concurrently in Chemistry 231. The theory and practice of laboratory operations.

250. Techniques of Analytical Chemistry (5) I, II
Three lectures and six hours of laboratory.
Prerequisite: Chemistry 201 and credit or concurrent registration in Mathematics 122 or 150. It is recommended that students who plan to enroll in this course do so the semester following completion of the prerequisites.

The theory and practice of gravimetric and volumetric methods of chemical analysis and introduction to instrumental methods of analysis. Not open to students with credit in Chemistry 250.
296. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor’s degree.

UPPER DIVISION COURSES
(Intended for Undergraduates)

310A-310B. Fundamentals of Physical Chemistry (3-3)
Prerequisites: Chemistry 250 or 251, Mathematics 122, and Physics 180B and 182B. Chemistry 310A is prerequisite to 310B. Not open to students who have credit in Chemistry 410A or 410B.

560A-560B. General Biochemistry (3-3)
Prerequisites: Chemistry 230 or 231. The chemistry of intermediary metabolism and its regulation. Not open to students with credit in Chemistry 560A-560B.

407. Problem Solving in Chemistry (1) I, II
Three hours of laboratory.
Prerequisite: Chemistry 250 or 251.

410A-410B. Physical Chemistry (3-3)
Prerequisites: Chemistry 201, Mathematics 152, and credit or concurrent registration in Physics 197 and 197L. Not open to students with credit in Chemistry 310A or 310B.

510. Advanced Physical Chemistry (3)
Prerequisite: Chemistry 410B.
Theoretical principles of chemical thermodynamics, statistical mechanics, chemical kinetics, quantum chemistry and molecular structure and spectroscopy, with applications.

520A. Inorganic Chemistry (3)
Prerequisite: Credit or concurrent registration in Chemistry 310B or 410B.
The physical basis of the periodic system, complex inorganic compounds, and the nature of the chemical bond.

520B. Inorganic Chemistry (3) II
Prerequisite: Chemistry 520A.
An advanced systematic study of representative and transition elements and their compounds.

530. Theoretical Organic Chemistry (3)
Prerequisites: Chemistry 310A or 410A, and 431. Recommended: Credit or concurrent registration in Chemistry 310B or 410B.
Electronic and physical properties of organic molecules; structure-reactivity correlations; Electronic structure of molecules (quantitative molecular orbital theory); stereochemistry; and linear free energy relationships.

537. Organic Qualitative Analysis (4)
Two lectures and six hours of laboratory.
Prerequisites: Chemistry 431 and credit or concurrent registration in Chemistry 410B or 410A. The physical basis of the periodic system, complex inorganic compounds, and the nature of the chemical bond.

550. Instrumental Methods of Chemical Analysis (2)
Three lectures and six hours of laboratory.
Prerequisite: Chemistry 431 and credit or concurrent registration in Chemistry 310A or 410A.
Non-instrumental separations, qualitative organic microanalysis, sampling and interpretation of experimental data.

560A-560B. General Biochemistry (3-3)
Prerequisites: Chemistry 431 and credit or concurrent registration in Chemistry 310A or 410A.
The structure, function, metabolism, and thermodynamic relationships of chemical entities in living systems. Not open to students with credit in Chemistry 361A-361B.
567. Biochemistry Laboratory (2)
Six hours of laboratory.
Prerequisite: Credit or concurrent registration in Chemistry 361A or 560A.
Theory and practice of procedures used in study of life at molecular level. Includes purification and characterization of enzymes, isolation of cell components, and use of radioactive tracer techniques.

577. Radiochemical Analysis (4)
Two lectures and six hours of laboratory.
Prerequisite: Chemistry 310A or 410A.
Principles and techniques of radioactivity applied to the various fields and problems of chemistry. Instrumentation, tracer application, activation analysis, nuclear reactions and radiolysis.

596. Advanced Special Topics in Chemistry (1-3)
Prerequisite: Consent of instructor.
Advanced selected topics in modern chemistry. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units.

GRADUATE COURSES
Refer to the Graduate Bulletin.

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Chinese
In the College of Arts and Letters

Faculty
Professor: Woo

Offered by the Department of Classical and Oriental Languages and Literatures

Courses in Chinese.
Major or minor work in Chinese is not offered.

LOWER DIVISION COURSES

101. Elementary (4) I
Four lectures and one hour of laboratory.
Prerequisite: Chinese 101.
Continuation of Chinese 101.

102. Elementary (4) II
Four lectures and one hour of laboratory.
Prerequisite: Chinese 101.
Continuation of Chinese 101.

296. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

UPPER DIVISION COURSES
(Intended for Undergraduates)

303. Readings in Contemporary Chinese (4) I
Prerequisite: Chinese 202.
Readings in contemporary authors: poetry, short stories, essays.

304. Readings in Chinese (4) II
Prerequisite: Chinese 303.
Readings ranging from classical to contemporary sources.

496. Topics in Chinese Studies (1-4)
Topics in Chinese language, literature, culture, and linguistics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit eight units.

499. Special Study (1-3) I, II
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.
Classics

in the College of Arts and Letters

Faculty
Emerita: Burnett
Professors: Ester, Genovese, Hamilton, Schabar, Warren

Offered by the Department of Classical and Oriental Languages and Literatures

Major in classics with the A.B. degree in liberal arts and sciences.
Teaching major in classics (concentration in Latin) for the single subject teaching credential in foreign languages.
Minor in classical humanities.
Minor in classics.

Classics is the discipline which embraces the study of all aspects of ancient Greek and Roman civilizations, especially literature. The foundation and basic tool for a fuller appreciation of classical culture is a familiarity with ancient Greek or Latin. Courses marked by the letters "G" or "L" are language courses in Greek or Latin and therefore satisfy foreign language requirements. Courses referred to simply as "classics" require no knowledge of Greek or Latin and are taught entirely in English.

High School Equivalents

High school foreign language courses may be used for purposes of placement in college courses and may be counted toward meeting the foreign language requirement in various majors. These high school courses will not count as college credit toward graduation.
Secondary school language courses can be used as follows:
1. The first two years of high school level language count as the equivalent of the first semester of a college level course, although students with fewer than three years of high school level language may complete the first semester college course for graduation credit.
2. The first three years of high school level language count as the equivalent of the first two college semesters, although students with fewer than four years of high school level language may complete the second semester college course for graduation credit. Students who have completed three years of foreign language in high school will not receive credit for the first semester college course unless at least five years separate the last high school course and the first college course.
3. Four years of high school level language count as the equivalent of three college semesters, thus fulfilling the foreign language requirement.

Advising

All College of Arts and Letters majors are urged to consult with their department adviser as soon as possible, they are required to meet with their department adviser within the first two semesters after declaration or change of major.

Classics Major

With the A.B. Degree in Liberal Arts and Sciences

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements." A minor is not required with this major.

Concentration in Classical Humanities

Preparation for the major. Choice of Classics 101G-202G, Classics 250G, Classics 101L-202L, or Classics 250L. (8-10 units.) Students should note that a number of the upper division required and recommended courses listed below have lower division prerequisites, but these prerequisites do not constitute requirements per se for the completion of the major.

Foreign Language Requirement. The foreign language requirement is automatically fulfilled through course work for preparation for the major plus one language course in the major.

Upper Division Writing Requirement. Passing the University Writing Examination or one of the following courses: English 304W, History 396W or 430W.

Major. A minimum of 30 upper division units to include Classics 320, 330, History 500A-500B, and Philosophy 301 (prerequisites are waived for students in this major); six units from classics, Anthropology 478, Art 566, Religious Studies 310, or Speech Communication 350; six units of Greek or Latin; and three units of Classics 599 as a directed senior project.

Minor. A minor in art (history), comparative literature, English, foreign language, history, philosophy, or religious studies is recommended with this major.

Concentration in Greek

Preparation for the major. Classics 101G-202G or Classics 250G. (8-10 units)

Foreign Language Requirement. The foreign language requirement is automatically fulfilled through course work for preparation for the major plus one language course in the major.

Upper Division Writing Requirement. Passing the University Writing Examination or one of the following courses: English 304W, History 396W or 430W.

Major. A minimum of 30 upper division units to include Classics 320 and History 500B, or Philosophy 301; and 9-12 units of Greek.

Minor. A minor in art (history), comparative literature, English, foreign language, history, philosophy, or religious studies is recommended with this major.

Concentration in Latin

Preparation for the major. Classics 101L-202L, or Classics 250L. (8-10 units)

Foreign Language Requirement. The foreign language requirement is automatically fulfilled through course work for preparation for the major plus one language course in the major.

Upper Division Writing Requirement. Passing the University Writing Examination or one of the following courses: English 304W, History 396W or 430W.

Major. A minimum of 30 upper division units to include Classics 320 and History 500B, or Philosophy 301; and 9-12 units of Latin.

Minor. A minor in art (history), comparative literature, English, foreign language, history, philosophy, or religious studies is recommended with this major.

Concentration in Greek and Latin


Foreign Language Requirement. The foreign language requirement is automatically fulfilled through course work for preparation for the major plus one language course in the major.

Upper Division Writing Requirement. Passing the University Writing Examination or one of the following courses: English 304W, History 396W or 430W.

Major. A minimum of 30 upper division units to include Classics 320; nine additional units selected from classics, History 500A, 500B, or Philosophy 301; nine units of Greek; and nine units of Latin.

Minor. A minor in art (history), comparative literature, English, foreign language, history, philosophy, or religious studies is recommended with this major.
Classics Major (Concentration in Latin)*

For the Single Subject Teaching Credential in Foreign Languages

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the College of Education. This major may be used by students in teacher education as an undergraduate major for the A.B. degree in liberal arts and sciences.

Preparation for the major. Classics 101L-202L. (10 units.)

Foreign Language Requirement. The foreign language requirement is automatically fulfilled through course work for preparation for the major plus one language course in the major.

Upper Division Writing Requirement. Passing the University Writing Examination or one of the following courses: English 304W, History 396W or 430W.

Upper Division Writing Requirement. Passing the University Writing Examination or one of the following courses: English 304W, History 396W or 430W.

Major. A minimum of 30 upper division units to include Classics 320 and History 500B, nine additional units selected from classics, History 500A, or Philosophy 301, and 15 units in Latin to include three units of Classics 599L as a course in teaching techniques.

The major for the Single Subject Teaching Credential has been submitted to the Commission on Teacher Credentialing. Consult department to verify current program requirements.

Classical Humanities Minor

The minor in classical humanities consists of a minimum of 15 units, at least 12 of which must be upper division. Lower division units may be selected only from Classics 120, 140, or 296. Six to nine upper division units must be selected from courses in classics (non-language) and three to six units from Anthropology 478, Art 568, History 500A, 500B, Philosophy 301, Religious Studies 310, or Speech Communication 350.

Students should note that some of these upper division courses have lower division prerequisites, but these prerequisites do not constitute requirements per se for completion of the minor.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

Classics Minor

The minor in classics consists of a minimum of 15-22 units, 12 of which must be upper division and nine of which must be in Latin or in Greek. Three to nine upper division units must be selected from classics (non-language), History 500A, 500B, or Philosophy 301.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

LOWER DIVISION COURSES

No credit will be given for Classics 101G, 202G, 303G, 304G taken out of sequence.

No credit will be given for Classics 101L, 202L, 303L, 304L taken out of sequence.

101G. Elementary Greek I (5) I

Introduction to ancient Greek, emphasizing grammatical foundations of New Testament and Attic prose. Aimed toward rapid comprehension. Not open to students with credit in Classics 250G.

101L. Elementary Latin I (5) I

Introduction to Latin, emphasizing grammatical foundations of classical prose. Aimed toward rapid comprehension. Not open to students who have completed three years of high school Latin. Not open to students with credit in Classics 250L.

120. Latin and Greek Word Derivation (3) I, II

A general and elementary course in philology, emphasizing frequently occurring Latin and Greek bases and their English derivatives.

140. The Heritage of Greece and Rome (3) I, II

Greek and Roman art, literature, and institutions as reflected in the Western tradition.

202G. Elementary Greek II (5) II

Prerequisite: Classics 101G.

Continuation of Greek grammar with selections illustrating syntax and style. Not open to students with credit in Classics 250G.

202L. Elementary Latin II (5) II

Prerequisite: Classics 101L.

Continuation of Latin grammar with selections illustrating syntax and style. Not open to students who have completed four years of high school Latin. Not open to students with credit in Classics 250L.

250G. Accelerated Elementary Greek (8) S Extension

Not open to students with credit in Classics 101G and 202G.

250L. Accelerated Elementary Latin (8) S Extension

Not open to students with credit in Classics 101L and 202L; not open to students who have completed four years of high school Latin.

296. Experimental Topics (1-4)

Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

303G. Readings in Greek Prose (3) I

Prerequisite: Classics 202G or 250G.

Readings selected from Greek history, philosophy, oratory, and New Testament. Authors may include Xenophon, Plato, Lysias, the Evangelists. Emphasis on rapid reading.

303L. Readings in Latin Prose (3) I

Prerequisite: Classics 202L or 250L.

Readings selected from classical Latin history, philosophy, oratory, letters. Authors may include Sallust, Cicero, Pliny the Younger. Emphasis on rapid reading.

304G. Readings in Greek Poetry (3) II

Prerequisite: Classics 303G.

Readings selected from Greek epic, elegy, tragedy. Authors may include Homer, Sophocles, Euripides.

304L. Readings in Latin Poetry (3) II

Prerequisite: Classics 303L.

Readings selected from classical Latin epic, lyric, elegy, comedy. Authors may include Vergil, Catullus, Ovid, Plautus.

310. Greek and Roman Mythology (3) I, II

Mythological elements in Greek and Roman art, literature, and religion.

320. Classical Literature (3) I

Reading in translation of Greek and Latin masterpieces. Emphasis on epic and prose genres. Authors such as Homer, Herodotus, Plato, Vergil, Apuleius, Literary and historical criticism.

330. Classical Drama (3) II

Reading in translation of Greek and Roman tragedies and comedies. Playwrights such as Aeschylus, Sophocles, Euripides, Aristophanes, Plautus, Seneca. Literary, dramatic, historical criticism.

340. Classical Civilization (3)

Greek and Roman civilization from Bronze Age to Late Empire. Integration of history, philosophy, literature, the arts, and society.
350. Eros and Amor (3)
Reading in translation of Greek and Latin works concerned with love and sexuality. Emphasis on the great literary affaires d’amour as well as common, mythical, and philosophical attitudes. Authors such as Sappho, Euripides, Plato, Catullus, Ovid, Longus. Literary criticism and cultural comparisons.

496. Topics in Classical Studies (1-4)
Topics in classical languages, literatures, cultures, and linguistics. May be repeated with new content. See Class Schedule for specific content. Maximum credit nine units. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor’s degree.

C. Topics in Classics.
G. Topics in Greek. Advanced reading in an author, genre, or period, or work in linguistics.
L. Topics in Latin. Advanced reading in an author, genre, or period, or work in linguistics.

UPPER DIVISION COURSE
(Also Acceptable for Advanced Degrees)

599. Special Study (1-3) I, II
Prerequisites: Consent of major or graduate adviser; to be arranged by department chair and instructor. For 599C: Classics 304G or 304L. For 599G: 304G. For 599L: 304L.
Individual study. Maximum credit six units.

C. Special Study in Classics.
G. Special Study in Greek.
L. Special Study in Latin.

Communicative Disorders
In the College of Human Services

The clinical services area is accredited by the American Speech-Language-Hearing Association.

Faculty
Emeritus: Earnest, Kopp, Pfaff
Chair: Novak (Acting)
Professors: Nichols, Riedman, Singh, Thile
Associate Professors: Allen, Dworkin, Hodson, Newhoff, Novak
Assistant Professors: Christensen, Davies, Jones, Willems
Lecturers: Fischer, Frank, Launer

Offered by the Department:
Master of Arts degree in communicative disorders.
Major in communicative disorders with the A.B. degree in applied arts and sciences.
Minor in communicative disorders.

Communicative Disorders Major
With the A.B. Degree in Applied Arts and Sciences.
All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on “Graduation Requirements.” A minor is not required with the major.

Preparation for the major:
Passing the SDSU Mathematics Placement Examination, Communicative Disorders 106 and 205; Physics 201; Psychology 101, 260, 270. (18 units.)

Upper Division Writing Requirement:
Passing the University Writing Examination or one of the approved writing courses with a grade of C (2.0) or better.

Major:
A minimum of 24 upper division units in communicative disorders to include Communicative Disorders 320, 321, 322, 340, 341, 531; Psychology 330; and five units of electives selected from Communicative Disorders 358, 401, 422, 423, 458, 530, 539, 543, 547, 550, 551, 552, 553, 554, 555.

Communicative Disorders Minor
The minor in communicative disorders consists of 20 units in communicative disorders to include Communicative Disorders 104, 106, 205, 320, 321, 340*, and one of the following: Communicative Disorders 322, 531, or 550. Communicative Disorders 341 is not required for the minor.

Prerequisites for the minor include Physics 201, Psychology 101 and 260. (10 units.)
Coursed in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

Credentials
The Department of Communicative Disorders offers academic and practica course work applicable to two credentials in the Ryan Credential Program. Students desiring to work in the public schools with speech, language, or hearing-impaired pupils may choose the Special Education Specialist Credential for the Communication Handicapped (CH) or the Clinical Rehabilitative Services Credential (C-RS). Each credential is competency-based, that is, specified competencies have been identified as requirements for areas of specialization by the
Commission for Teacher Credentialing. Candidates may satisfy institution requirements, therefore, by either satisfactory completion of required courses or their equivalency, or by demonstrating equivalent competencies by experience or examination. Candidates may enter the CH or C-RS credential programs at undergraduate or graduate levels.

Each credential has designated areas of specialization. Students wishing to prepare to be Teachers of the Deaf or Deaf-Blind are obliged to meet the requirements of the CH credential. Students preparing to serve as School Audiologists must follow the C-RS credential program. Students desiring preparation as Classroom Teachers of Severe Language Handicapped (or Aphasic) (Special Class Authorization SCA) pupils may pursue either the CH or C-RS Credential Program. Students preparing to serve as School Audiologists must follow the C-RS credential program.

Special Education Specialist Credential for the Communication Handicapped

The Special Education Specialist Credential for the Communication Handicapped prepares students for an emphasis in one or more of the following areas of handicap: Deaf and Severely Hard of Hearing, Deaf-Blind, Severe Oral Language (including aphasia) (Special Class Authorization SCA), Speech and Hearing.

The Special Education Specialist Credential for the Communication Handicapped specifies a sequence of communicative disorders courses plus a sequence of education courses.

Admission Requirements

1. Formal application to the Department of Communicative Disorders.
2. Interview with a faculty member in the Department of Communicative Disorders.
3. Submission to the program for the Single Subject Credential (Secondary) or Multiple Subjects Credential (Elementary) - or -
   A basic teaching credential.
4. Students should consult with appropriate advisers in the College of Education for specific requirements.
5. Students applying to the program at the postbaccalaureate level must satisfy the admission requirements of the department for classified graduate standing.

Program

Persons interested in the Special Education Specialist Credential shall:

1. Concurrently or prior to completion of the specialist credential, complete the single subject credential (preliminary or clear) or the multiple subjects credential (preliminary or clear).
2. Students may choose to pursue either a or b:
   a. Major in Liberal Studies (offered by the College of Education) in conjunction with specified communicative disorders courses.
   b. Pursue a departmental major; complete specified prerequisites for the College of Education; pass the National Teacher Examination prior to entering the College of Education professional education sequence.
3. Complete a minimum of one year of study, including:
   a. The Special Education generic course work: Special Education 500, 501.
   b. Courses outside of the Department of Communicative Disorders including Psychology 101, 260, 270, Physics 201.
   c. Advanced work in the area of specialization in the Department of Communicative Disorders including:
      (2) Additional course work required for the specific area of emphasis within the credential (Severe Oral Language, Deaf, Deaf-Blind, Speech and Hearing), selected by the student in conjunction with an adviser.
4. A postbaccalaureate year (minimum of 30 semester units) is required of all candidates.

Clinical-Rehabilitative Services Credential

Clinical-Rehabilitative Services (C-RS) Credentials are available in the following areas:

- Language, Speech and Hearing (LSH)
- Audiology
- Severe Language Handicapped/Aphasic (SLH) (Special Class Authorization SCA)
- Clinical-Rehabilitative Services Credential

A postbaccalaureate year (minimum of 30 semester units) is required of all candidates. The following generic courses within the Department of Communicative Disorders are required:

Communicative Disorders 106, 205, 320, 321, 322, 345 or 357, 340, 401, 432, 524, 526, 527, 530, 531, 545, 546, and 551. Courses from other departments include: Psychology 101 or Sociology 101; Psychology 210, 260 or Zoology 108; Psychology 330 or Family Studies and Consumer Sciences 270, Psychology 340 or Sociology 440 or Family Studies and Consumer Sciences 436, 271 or 576; Physics 201; Special Education 500, 596.

The Advanced Specialization Program in Language and Speech Hearing (LSH) requires the following additional courses:

Communicative Disorders 401, 422, 433, 528, 528L, 529, 552, 553, 626, and 646 (or 546). Courses from other departments include Linguistics 553.

The Severe Language Handicapped (SLH) credential requires the following courses within the department in addition to those required for the LSH credential. Communicative Disorders 325 (SLH class placement), 529, 554, 555, and 433 (SLH class placement). Courses in other departments include Elementary Education 411 or 421, 413; Education 631, Special Education 601.

In addition to the generic program, the Advanced Specialization Program in Audiology requires the following courses within the Department of Communicative Disorders: Communicative Disorders 365, 433 (Audiology class placement), 529, 542, 542L, 543, 547, 550, 552, 553, 600, 644, 648 (Pediatrics), 656 and 657.

Certificates and Licensure

Preparation Leading to the Certificate of Clinical Competence from the American Speech-Language-Hearing Association

Students may complete the academic and clinical practice requirements leading to the Certificate of Clinical Competence in Speech Pathology (CCC-Sp) or to the Certificate of Clinical Competence in Audiology (CCC-A) given by the American Speech-Language-Hearing Association (ASHA). The certificate requires 60 units of course work, 30 units of which must be completed at the graduate level; 300 clock hours of supervised clinical experience; 150 hours of which must be completed at the graduate level; a clinical fellowship year; and a national examination. The academic and practice requirements must meet certain specifications. Consult an adviser in the area in which certification is desired for specific information.

Preparation Leading to the State Credential and the Professional Certificate from the Council on Education of the Deaf

Students may complete the academic and practice requirements leading to the State Credential and the Professional Certificate given by the Council on Education of the Deaf. The Professional Certificate requires a specific pattern of courses and teaching experiences and evidence of successful classroom teaching following completion of the academic requirements. Consult an adviser in the Program for Education of Hearing Impaired for more information.

Preparation Leading to State Licensure in Speech Pathology or Audiology

Students may complete the academic and clinical practice requirements leading to California State Licensure in Speech Pathology or in Audiology, a legal requirement for all individuals professionally employed in nonpublic school settings. The Speech Pathology and Audiology Examining Committee which operates within the California State Board of Medical Quality Assurance requires evidence of completion of 24 semester hours of course work in the area (Speech Pathology or Audiology) in which the license is to be granted, 275 clock hours of clinical experience, nine months of full-time experience (Required Professional Experience), and a national examination. Consult an adviser in the area in which licensure is desired for specific information.
## LOWER DIVISION COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>106.</td>
<td>Communicative Disorders</td>
<td>(3) I, II</td>
<td>Orientation to the field of speech pathology and audiology. Survey of communicative disorders, covering all areas of exceptionality. Normal growth and development as it relates to speech and language. Fifteen hours of observation or project required. Waiver of this course is permitted only upon satisfactory passage of a competency examination.</td>
</tr>
<tr>
<td>107.</td>
<td>Management of Clinical Activities</td>
<td>(1) I, II Cr/NC</td>
<td>Assisting in the operations of the speech and hearing clinic. Maximum credit two units.</td>
</tr>
<tr>
<td>108.</td>
<td>Oral Communication Laboratory</td>
<td>(1) I, II Cr/NC</td>
<td>Two hours of laboratory. Prerequisite: Consent of instructor. Individual laboratory training on specific speech problems. Student chosen through testing by Department of Communicative Disorders.</td>
</tr>
<tr>
<td>205.</td>
<td>Introduction to Audiology</td>
<td>(2) I, II</td>
<td>Audiology in diagnosis and rehabilitation of hearing impairment, medical practice, hearing conservation and research. Includes physics of sound, decibel, and ear anatomy as applied to fundamentals of audiological assessment and tuning fork tests. Fifteen hours of observation required. (Formerly numbered Speech Pathology and Audiology 105.)</td>
</tr>
</tbody>
</table>

## UPPER DIVISION COURSES

### INTENDED FOR UNDERGRADUATES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>305.</td>
<td>Speech and Language Development and Communication Disorders</td>
<td>(3) I, II</td>
<td>Normal development of speech and language. Identification, prevention and remediation of speech, hearing and language disorders. Five hours of observation required. Not open to communicative disorders majors.</td>
</tr>
<tr>
<td>320.</td>
<td>Phonetics</td>
<td>(3) I, II</td>
<td>Two lectures and three hours of laboratory. Prerequisite recommended: Communicative Disorders 104. Auditory, kinesthetic and visual analysis of the sounds of the English language, including regional and foreign dialects and disordered speech. Competency in IPA broad transcription and introduction to narrow transcription.</td>
</tr>
<tr>
<td>321.</td>
<td>Anatomy and Physiology of Speech</td>
<td>(3) I, II</td>
<td>Two lectures and three hours of laboratory. Prerequisite: Psychology 260 or Zoology 108. Recommended: Credit or concurrent registration in Communicative Disorders 106. Anatomy and physiology of the speech-related structures of the head, neck and thorax. Laboratory exercises and demonstrations using charts, models, histological materials and cadavers.</td>
</tr>
<tr>
<td>322.</td>
<td>Psychological Foundations of Communicative Disorders</td>
<td>(3) II</td>
<td>Prerequisites: Communicative Disorders 106; Psychology 101, 330. Conceptual and theoretical bases for understanding communication as a psychological process determined by principles of learning within social contexts. Application of theories of personality, behavior and cognitive social learning to speech and language development, pathology, assessment and remediation. For students in all areas of communicative disorders.</td>
</tr>
<tr>
<td>325.</td>
<td>Fieldwork in Speech, Hearing and Language</td>
<td>(1-3) I, II Cr/NC</td>
<td>Two hours for each unit of credit. Prerequisite: Departmental approval and credit or concurrent registration in Communicative Disorders 106. Field observation and participation under supervision with small groups or with individuals who have speech, hearing or language impairment. Maximum credit three units.</td>
</tr>
<tr>
<td>340.</td>
<td>Audimetry: Principles</td>
<td>(3)</td>
<td>Three hours of laboratory. Prerequisite: Credit or concurrent registration in Communicative Disorders 340. First enrollment should be concurrent with Communicative Disorders 340 to provide laboratory experience with pure tone, speech, and impedance audiometric tests presented in Communicative Disorders 340; also develops audiological competencies needed by nurses for the California School Audiometrist Certificate. May be repeated to obtain the contact hours in audiometric screening required by the American Speech-Language-Hearing Association and to develop the audiological competencies required by the Clinical Rehabilitative Services Credential. Maximum credit two units.</td>
</tr>
<tr>
<td>357.</td>
<td>Fieldwork with the Deaf</td>
<td>(1-2) I, II Cr/NC</td>
<td>Prerequisite recommended: Communicative Disorders 205. Field observation and participation under supervision with small groups of hearing impaired youngsters. Maximum combined credit six units for Communicative Disorders 357, 358, and 666.</td>
</tr>
<tr>
<td>358.</td>
<td>Manual Communication for the Hearing Impaired</td>
<td>(2) I</td>
<td>Prerequisites: Demonstrated professional need and consent of instructor. Recommended: Communicative Disorders 106 or 205; credit or concurrent registration in Communicative Disorders 357. Structure, vocabulary and syntax of manual communication including the development of competencies in manual communication and in the use of manual communication as a method of teaching the hearing impaired.</td>
</tr>
<tr>
<td>401.</td>
<td>Voice Disorders</td>
<td>(3)</td>
<td>Two lectures and three hours of laboratory. Prerequisite: Communicative Disorders 321. Theory and practice in the remediation of voice problems. Perceptual training and measurement of vocal dimensions.</td>
</tr>
<tr>
<td>422.</td>
<td>Remediation for Fluency Disorders in School-Aged Children</td>
<td>(2) I</td>
<td>Prerequisite: Communicative Disorders 322. Theoretical and phenomenological understanding of stuttering as a communicative disorder; explanations for learning of dysfluent behaviors, and applied techniques involved in rehabilitation of school-aged children with dysfluent speech.</td>
</tr>
<tr>
<td>423.</td>
<td>Organic Communicative Disorders</td>
<td>(3)</td>
<td>Prerequisites: Communicative Disorders 320, 321, 340, 341, and 531; competency examination. Survey of cleft palate, cerebral palsy and neuromotor disorders, adult aphasias, autism, and neurologically based language disorders in children. Includes etiological factors, speech, language and related symptomatology, as well as speech and language evaluation and therapy procedures. (Formerly numbered Communicative Disorders 323.)</td>
</tr>
<tr>
<td>433.</td>
<td>Clinical Practice in Public Schools</td>
<td>(4) I, II Cr/NC</td>
<td>Prerequisites: Communicative Disorders 420, four units of practica, and postbaccalaureate standing. Prior to admission applicants must receive departmental approval. Clinical practice in elementary or secondary schools or community colleges in speech pathology and audiology. Applies only toward Language, Speech and Hearing (LSH) track of the Clinical Rehabilitative Services Credential (Ryan) or for the Certificate of Clinical Competency in Speech Pathology (ASHA). One hundred twenty hours practicum required for the LSH track, one hundred fifty hours practicum for the SLH track, both LSH track and SLH track experience may be undertaken together for a total of two hundred ten hours of practicum.</td>
</tr>
</tbody>
</table>
453. Directed Internship: Communication Handicapped (1-4) I, II Cr/NC
Prerequisites: Two units of Communicative Disorders 556 and one unit of Communicative Disorders 565 or Communicative Disorders 529 and four units of Communicative Disorders 526, 546, 626, 648. Basic teaching credential. Prior to admission applicants must receive departmental approval. Application to take course should be made during preceding semester.
Teaching in public school with exceptional individuals. Applies toward the Special Education Specialist Credential for the Communication Handicapped (Deaf, Blind, Speech and Hearing or Severe Oral Language) and Certificate of Clinical Competence in Speech-Language Pathology or Professional Certificate from the Council on Education of the Deaf. Applicants should consult with coordinator of Speech-Language Pathology or coordinator of Education of Hearing Impaired for specific hour requirements. (Formerly numbered Special Education 480.)

456. Total Communication for Teachers of the Hearing Impaired (2)
Prerequisite: Communicative Disorders 358. Concurrent registration in 458L recommended. Intermediate level course in the use of total communication with emphasis on developing formal and informal nonverbal communication skills.

458L. Total Communication Laboratory (1)
Three hours of laboratory.
Prerequisite: Consent of instructor.

458. Total Communication Laboratory (1)
Prerequisite: Credit or concurrent registration in Communicative Disorders 458. Laboratory experience to develop receptive and expressive total communication skills. Maximum credit two units.

466. Topics in Communicative Disorders (1-3) I, II
Study of some problem in communicative disorders. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units.

499. Special Study (1-3) I, II
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

524. Clinical Procedures in Communicative Disorders (3) I, II
Prerequisites: Communicative Disorders 322, 423, 552, 553. Remediation models and clinical approaches; procedures, and techniques. Integration of theoretical information and clinical applications. (Formerly numbered Communicative Disorders 324.)

526. Clinical Practice in Speech-Language Pathology (1-3) I, II
Three hours of laboratory.
Prerequisites: Communicative Disorders 325 or documented 25 hours of observation, 524, 527. Admission is based on passage of a competency examination prior to enrollment and departmental approval.
Supervised practice with representative speech and language problems. Up to three units may be taken concurrently; maximum credit three units. Maximum combined credit eight units for Communicative Disorders 526, 545, 546, and 626. One unit represents 26 hours of direct clinical practice. Qualified transfer students must enroll in at least one unit of 526 prior to 626. (Formerly numbered Communicative Disorders 326.)

527. Diagnostic Methods in Speech-Language Pathology (3) I, II
Prerequisites: Communicative Disorders 423, 552, 553. Credit or concurrent registration in Communicative Disorders 524.
Principles and procedures in the assessment and prognosis of communicative disorders to include delayed speech and mental retardation. Case histories, testing, interviewing, and clinical reporting. Child, parent, and teacher counseling.

528. Diagnostic Practicum in Speech-Language Pathology (3) I, II
One lecture and six hours of laboratory.
Prerequisite: Communicative Disorders 527 and passage of a competency examination. Supervised clinical practice in diagnostic methods. Experience in multidisciplinary assessment.

528L. Diagnostic Practicum in Communicative Disorders: Multidisciplinary Assessment (1) I, II
Three hours of laboratory.
Prerequisites: Communicative Disorders 527 and credit or concurrent registration in 528. Participation in Central Intake process of SDSU Clinical Training Center, including diagnostic team assessments and staffing.

529. Orientation to Public School Practicum (3) I, II
Prerequisites: Communicative Disorders 524 and 527. Minimum of 50 hours of supervised clinical practicum, plus departmental approval. Recommended: Credit or concurrent registration in Communicative Disorders 527. 526, 529, 540, and 646.
Goals: materials and procedures for organizing and administering speech, language, and hearing programs in the school. Fifteen hours of observation and fifteen hours of screening required. Should be taken the semester before Communicative Disorders 433 or 453.

530. Family Communication Dynamics (3)
Prerequisites: Communicative Disorders 322 and 526. The communication environment in the home. Parent-child interaction in relation to the origin and alleviation of functional and organic speech disorders.

531. Language Structure (3)
Prerequisite: Communicative Disorders 106. Systematic study of the design features of language as they relate to communication behavior. The primary focus is the role of language structure in disordered communication.

532. Assessment of Language Disorders (3)
Prerequisite: Communicative Disorders 531.

533. Neuropathologies of Speech, Hearing and Language (3) I, II
Prerequisites: Communicative Disorders 321 and 340. Recommended: Communicative Disorders 423.
Research and theory concerning the nature, etiologies and principles of treatment of disorders of speech, hearing and language resulting from pathologies of the nervous system.

540. Hearing Conservation and Audiometry for School Nurses (3) I, II
Prerequisite: Registered nurse.
Builds on registered nurse's knowledge of anatomy, physiology, and medical-surgical treatment of disease as it relates to auditory mechanism. Designed to give background in hearing screening (pure tone and impedance) and awareness of ramifications of hearing loss in children necessary for referral and follow-up. Fulfills three-unit requirement for the School Nurse Credential and may be used toward the six-unit State Audiometric Certificate requirement. Not open to students with credit in Communicative Disorders 205, 340, 341.

542. Audiometry: Application (3) I, II
Prerequisites: Communicative Disorders 341 and concurrent registration in 542L. Pure tone and speech audiometry; masking; impedance audiometry; tests for nonorganic and for sensorineural hearing loss; reporting test results; audiometer calibration. (Formerly numbered Communicative Disorders 342.)

542L. Audiometry: Laboratory (1) I, II
Prerequisites: Communicative Disorders 341 and concurrent registration in 542L. Laboratory experience in administering audiometric test batteries and in calibrating audiometric equipment. (Formerly numbered Communicative Disorders 342.)

543. Hearing Amplification (1 or 3) I
Prerequisites: Module I: Communicative Disorders 340. Module II: Communicative Disorders 542.
Module I includes hearing aid components, functions, trouble shooting and client orientation to amplification (1 unit). Module II includes hearing aid evaluations, fittings, and electroacoustical hearing aid analysis (2 units). Students may elect Module I (1 unit) or Modules I and II (3 units).
545. Clinical Practice in Audiolingual Assessment (1-3) I, II
Three hours of laboratory.
Prerequisite: Communicative Disorders 542.
Supervised practicum with pure tone, speech, and special audiolingual testing and with hearing aid evaluation. One unit represents two hours of clinical contact and one hour of staffing per week. Up to three units may be taken concurrently; maximum credit three units. Maximum combined credit eight units for Communicative Disorders 526, 545, 546, 626, 645 or 646.
(Formerly numbered Communicative Disorders 345.)

546. Clinical Practice with Hard of Hearing (1-3) I, II
Three hours of laboratory.
Prerequisites: Communicative Disorders 526, 551. Recommended: Communicative Disorders 543, Module I; 552 and 553.
Supervised practicum in aural habilitation with hard of hearing clients. One unit represents two hours of clinical contact and one hour of staffing per week. Up to three units may be taken concurrently; maximum credit three units. Maximum combined credit eight units for Communicative Disorders 526, 545, 546, 626, 645 and 646.
(Formerly numbered Communicative Disorders 346.)

547. Hearing Conservation (2-3)
Prerequisite: Communicative Disorders 341.
Module I: Core information (noise measurement, analysis, reduction; its effect on hearing conservation; application to school hearing conservation programs). (2 units.)
Module II: Damage risk criteria and methods of hearing protection; application of core information to industrial settings. (1 unit.)
Students may elect Module I (2 units) or Modules I and II (3 units).

550. Problems of Deafness (3) I
Educational programs, services and resources for hearing impaired, historical background, philosophy, sociological and psychological problems.

551. Speech Reading and Auditory Training (3)
Prerequisites: Communicative Disorders 320 and 340; competency examination. Recommended: Communicative Disorders 357, 531 and 553.
Theory and methods of speech reading; auditory rehabilitation methods including survey of amplification systems. Fifteen hours of observation in program for deaf, severely hard of hearing.

552. Articulation Disorders and Methods (3) II
Prerequisites: Communicative Disorders 320, 321, 340, 531.
Significant theories and research in prevention and remediation of articulatory disorders. Includes emphases on speech habilitation of hearing impaired, cognitive and motor processing.

553. Language Disorders and Methods (3) I, II
Prerequisites: Communicative Disorders 320, 321, 340, 531.
Significant theories and research in language acquisition and language disorders. Includes assessment of, and intervention with, language impaired children. Includes emphasis on application to hearing impaired individuals.

554. Multisensory Integration (3)
Prerequisite: Communicative Disorders 553.
Theories of multisensory integration, sensory motor development, and auditory processing. Programs and techniques of remediation applicable to communicatively handicapped children.

555. Curriculum for the Communicatively Handicapped (3)
Prerequisites: Communicative Disorders 526 or 556, and 552 and 553.
Application of cognitive processing theory to the development and evaluation of curriculum, materials, and procedures; selection of learning modalities and appropriate modification of curriculum.
(Formerly numbered Special Education 575.)

556. Clinical Practice with the Deaf (1-3) I, II
Three hours of laboratory.
Prerequisites: Communicative Disorders 357, 558, credit in two of the following and concurrent registration in the third: Communicative Disorders 551, 552, 553. Admission to clinical practicum includes successful completion of competency examination.
Supervised therapy with representative problems found in the hearing impaired population. Maximum one unit first semester; maximum credit two units. Maximum combined credit eight units for Communicative Disorders 357, 556 and 558.
(Formerly numbered Communicative Disorders 356.)

558. Advanced Sign Language (2) I, II
Prerequisite: Communicative Disorders 458.
Theory of sign language for the classroom interpreter. Emphasis on conceptual sign, signed idioms and appropriate usage for the academic setting.

568. Spanish and Sign Language (2) I
Prerequisite: Demonstrate competence at the intermediate level in either Spanish or sign language.
Rudiments of sign language taught to Spanish speakers and the basics of Spanish to users of sign language. Emphasis on communication needs within health care setting, public school setting and informal social setting.

596. Selected Topics in Communicative Disorders and Science (1-4) I, II, S
Prerequisite: Twelve units in communicative disorders and science courses.
Specialized study of selected topics from the area of speech-language pathology, audiology, education of the hearing impaired, and speech and hearing science. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units. Maximum credit three units applicable to a master's degree.

GRADUATE COURSES
Refer to the Graduate Bulletin.
Comparative Literature
In the College of Arts and Letters

Faculty
Faculty assigned to teach courses in comparative literature are drawn from departments in the College of Arts and Letters.

Offered by Department of English and Comparative Literature
Major in comparative literature with the A.B. degree in liberal arts and sciences
Teaching major in comparative literature for single subject teaching credential in English
Minor in comparative literature.

Advising
All College of Arts and Letters majors are urged to consult with their department adviser as soon as possible. They are required to meet with their department adviser within the first two semesters after declaration or change of major.

Comparative Literature Major
With the A.B. Degree in Liberal Arts and Sciences
All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements." No more than 48 units in comparative literature and English courses can apply to the degree.

Preparation for the major. Any two lower division courses in comparative literature.

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Refer to section of catalog on "Graduation Requirements."

Upper Division Writing Requirement. Passing the University Writing Examination or English 500W, 508W, 581W, 582W with a grade of C (2.0) or better.

Major. A minimum of 24 upper division units in comparative literature courses or one of the following alternatives: (1) 18 units in comparative literature and six units in a foreign language literature (recommended for students who expect to do graduate work in comparative literature); or (2) 18 units in comparative literature and six units in English language literature, comprised of upper division courses in either British or American literature.

Comparative Literature Minor*
For the Single Subject Teaching Credential in English
For a description of the single subject teaching credential in English with a major in comparative literature, refer to this section of the catalog under English.

The major for the Single Subject Teaching Credential has been submitted to the Commission on Teacher Credentialing. Consult department to verify current program requirements.

Comparative Literature Minor
The minor in comparative literature consists of a minimum of 15 units in comparative literature, 12 units of which must be in upper division courses. The three lower division units must be either in Comparative Literature 210 or in a course preparatory to the student's interest area. The 12 units of upper division work must be selected, with advisor's approval, from within one of the following interest areas:

European: Comparative Literature 405, 510, 511, 512, 513, 514, 526.
Literary Theory, Criticism and Genres: Comparative Literature 560, 561, 562, 563, 564, 580, 581.

Literature and Society: When appropriate, Comparative Literature 470, 490, 495, 550, 561, 562, 563, 571, 581.

In addition the following variable content courses may be used in any of the above categories when they are appropriate: Comparative Literature 470, 490, 495, 550, 561, 562, 563, 571, 577, 580, 581.

The comparative literature minor is not available to students majoring in English.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

LOWER DIVISION COURSES
Since all reading assigned for classes in comparative literature is in English, knowledge of a foreign language is not required.

200. Topics in Comparative Literature (3) I, II
An introduction to the subject matter of comparative studies in literature. Focus on a specific movement, theme, figure, genre, etc. May be repeated with new title and content. See Class Schedule for specific content. Maximum credit six units.

210. Introduction to Comparative Literature (3) Cr/NC
Introductory study of comparative literature. Its current status, its historical development, range of comparative approaches. Generally includes guest presentations by various members of the comparative literature faculty. Recommended for majors in comparative literature.

270A-270B. World Literature (3-3) I, II
Comparative study of selected major works from various continents and cultures, with emphasis on the way literature deals with enduring human problems and values. Semester I: prior to 1500; Semester II: since 1500. 270A is not a prerequisite to 270B, and either may be taken separately.

UPPER DIVISION COURSES
(Designed for Undergraduates)

405. The Bible as Literature (3) I, II
Same course as English 405. Prose and poetry of the King James version. (Formerly numbered Comparative Literature 505.)

430. Asian Literature (3)
Selections from the literature of Asia: Chinese, Japanese, Indian, etc. Topic to be announced in Class Schedule. May be repeated with new title and content. Maximum credit six units of which three units may be applicable to General Education. (Formerly numbered Comparative Literature 530.)

440. African Literature (3)
Comparative study of African literature as well as Black literature of North and South America and the Caribbean; intercontinental influences and the theme of Black identity. (Formerly numbered Comparative Literature 540.)

445. Modern Latin American Literature (3) I, II
Reading selections from major Latin American authors. (Formerly numbered Comparative Literature 545.)

470. Folk Literature (3)
Studies in the ballad, bardic poetry, oral and popular literature and folklore. May be repeated with new title and content. See Class Schedule for specific content. Maximum credit six units of which three units may be applicable to General Education. (Formerly numbered Comparative Literature 570.)

490. Literary Movements (3)
A movement or theme in world literature—such as symbolism, realism, existentialism, alienation, or revolution. May be repeated with new title and content. See Class Schedule for specific content. Maximum credit six units.

495. Literature and Other Disciplines (3) Cr/NC
Comparative study of relationship between literature and another field, such as philosophy, psychology, political science, or sociology. May be repeated with new title and content. See Class Schedule for specific content. Maximum credit six units.
499. Special Study (1-3) I, II Cr/NC
Prerequisites: Consent of instructor and approval of department chair.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

510. Medieval Literature (3)
Representative selections from authors of the Middle Ages.

511. Continental Renaissance (3)
Representative selections from authors of the Renaissance period in continental Europe.

512. Seventeenth and Eighteenth Century European Literature (3)
Selected works by European writers prior to 1800.

513. Nineteenth Century European Literature (3)
Selected works by European writers between 1800 and 1900.

514. Modern European Literature (3)
Selected works by European writers of the twentieth century.

526. Modern Jewish Literature (3) I, II
Selected works by Jewish authors from the last half of the nineteenth century to the present, with emphasis on the United States and Israel.

535. Near Eastern Literature (3) I, II
Selections from the literature of the Near East: Persian, Arabic, Turkish, etc. Specific topic to be announced in class schedule. May be repeated with new title and content. Maximum credit six units.

550. Seminar (3)
An intensive study of a topic to be selected by the instructor. May be repeated with new title and content. See Class Schedule for specific content. Maximum credit six units.

560. The Epic (3)
Selected epic poems from world literature; emphasizes the Western epic tradition from Homer to the present. May be repeated with new title and content. See Class Schedule for specific content. Maximum credit six units applicable on a master's degree.

561. Fiction (3)
A comparative approach to themes and forms in fiction (novel and short story). Focus of course to be set by instructor. May be repeated with new title and content. See Class Schedule for specific content. Maximum credit six units.

562. Drama (3)
Forms and themes in drama. Focus of course to be set by instructor. May be repeated with new title and content. See Class Schedule for specific content. Maximum credit six units applicable on a master's degree.

563. Poetry (3)
A comparative approach to themes and forms in poetry. Focus of course to be set by instructor. May be repeated with new title and content. See Class Schedule for specific content. Maximum credit six units applicable on a master's degree.

571. Literary Use of Legend (3)
Literary treatment of such legendary figures as Don Juan, Faust, and Ulysses, in a wide range of literature and genres. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units.

577. Major Individual Authors (3)
In-depth study of the works of a major author, such as Sophocles, Dante, Cervantes, Goethe, Dostoyevsky or Proust. May be repeated with new title and content. See Class Schedule for specific content. Maximum credit six units.

580. Concepts in Comparative Studies (3)
Basic concepts in comparative studies in literature (e.g., influence, movement, figure, genre, etc.), their validity, usefulness and limitations. May be repeated with new title and content. See Class Schedule for specific content. Maximum credit six units.

581. Literary Uses of Languages (3)
Study of the functions of language in literary writings. May take the form of translation workshop, stylistic studies, etc. May be repeated with new title and content. See Class Schedule for specific content. Maximum credit six units.

595. Literature and Other Arts (3)
Prerequisite: Six lower division units in English, comparative literature or the arts. Comparative study of literature and such arts as painting, sculpture, architecture, music, dance and film. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units.
Criminal Justice Administration

In the School of Public Administration and Urban Studies
In the College of Professional Studies and Fine Arts

Faculty
Professor: Gitchoff
Associate Professors: Bootham, Sutton
Assistant Professor: Henderson

Offered by the School of Public Administration and Urban Studies
Major in criminal justice administration with the B.S. degree in applied arts and sciences.

Criminal Justice Administration Major

With the B.S. Degree in Applied Arts and Sciences

All candidates for a degree in applied arts and sciences must complete the graduation requirements in the section of this catalog on "Graduation Requirements."
A minor is not required with this major.

Preparation for the major. Criminal Justice Administration 200, Political Science 102, Sociology 101 and 110, and a three-unit course in elementary statistics (e.g., Sociology 201, Mathematics 250) (15 units.)

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 36 upper division units to include Public Administration 301; Criminal Justice Administration 301, 497 or 498, 540; six units (in addition to Public Administration 301) selected from all upper division Public Administration courses, and 15 additional upper division units selected with the approval of a department adviser. Within this program students may focus their study in areas such as law, law enforcement administration, court administration, correctional administration, juvenile justice administration, and deviance and social control. Interested students must seek guidance from a faculty adviser (may be any of the full-time faculty listed above) in selecting appropriate courses. A master plan for courses in the major must be approved by a faculty adviser and filed with the Evaluations Office at least one semester before graduation. It is recommended that the student complete a preliminary master plan of courses as soon as possible after declaring the major.

LOWER DIVISION COURSE

200. Introduction to Criminal Justice Administration (3) I, II
Survey of the structure, functions and problems of controlling criminal activity while preserving individual freedoms in a democratic society.

UPPER DIVISION COURSES
(Intended for Undergraduates)

301. Social Control, Social Policy and Administration of Justice (3) I, II
Prerequisite: Criminal Justice Administration 200.
Interrelationship of social control, social policy and administration of criminal justice in contemporary American society.

310. Law Enforcement Administration (3)
Administrative relationships within the criminal justice process with special reference to problems of courts and police and probation agencies.

320. The Administration of Criminal Law (3)
Constitutional law principles as implemented in criminal courts with emphasis on critical analysis of factual situations and the argument of legal issues in criminal cases from both defense and prosecution perspectives.

321. Juvenile Justice Administration (3)
Prerequisite: Criminal Justice Administration 301.
Assessment of the structure and functions of agencies and institutions which comprise the juvenile justice system in America; evolution of policies and programs for prevention of delinquency and treatment of the juvenile offender.

330. Contemporary Correctional Administration (3)
Prerequisite: Criminal Justice Administration 301.
Contemporary policies and practices of local, state and federal correctional agencies, the influence of reform movements, and the interrelationship of corrections with other criminal justice system components.

333. Judicial Administration (3)
Prerequisites: Criminal Justice Administration 301 and Public Administration 301.
Review of significant developments at the state and federal levels, including court unification and financing, leadership, congestion, training, selection, tenure, discipline, removal and retirement of court-related personnel; and technological applications.

496. Selected Topics in Criminal Justice Administration (1-3)
Selected current topics in criminal justice administration. See Class Schedule for specific content. Limit of nine units of any combination of 496, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units. (Formerly numbered Criminal Justice Administration 496.)

497. Investigation and Report (3) I, II
Prerequisites: Consent of instructor and senior standing.
Analysis of special topics.

498. Internship in Criminal Justice Administration (2-6) I, II Cr/NC
Prerequisite: Consent of instructor.
Students are assigned to various government agencies and work under joint supervision of agency heads and the course instructor. Participation in staff and internship conferences.

499. Special Study (1-3) I, II
Prerequisites: Twelve units of upper division criminal justice administration and consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

502. Juvenile Deviance and the Administration Process (3)
Prerequisite: Criminal Justice Administration 321.
Problems of implementing and evaluating policies and programs for prevention of juvenile delinquency and treatment of juvenile offenders; an assessment of the proposed standards and goals for juvenile justice administration.

510. Contemporary Issues in Law Enforcement Administration (3)
Prerequisite: Criminal Justice Administration 310.
Assessment of problems confronting administrators of law enforcement agencies and of recent efforts to enhance the capability of agencies to control criminal activity while guarding individual liberties.

520. Prosecutorial Function in Administration of Justice (3)
Prerequisite: Criminal Justice Administration 301.
Analysis of prosecutor's function at local, state and federal levels and in selected foreign nations, including appraisal of proposed national standards and goals for prosecutors.

531. Probation and Parole (3)
Prerequisite: Criminal Justice Administration 330.
Basic concepts, history, legislation, and practices used in work with juveniles and adults who have been placed on probation or parole; criteria of selection, methods of supervision, and elements of case reporting.
540. Applied Planning, Research and Program Evaluation in Criminal Justice Administration (3) I, II
Prerequisite: Criminal Justice Administration 301.
Application of planning, research and program development and evaluation principles to the field of criminal justice.

543. Community Resources in Criminal Justice Administration (3)
Prerequisite: Criminal Justice Administration 301.
Exploration of present and probable roles of public and private agencies and volunteers in criminal justice administration.

550. Crime Prevention Administration and Social Control (3)
Prerequisite: Criminal Justice Administration 301.
Examination of policies and probable consequences of both public and private crime prevention efforts from a social control perspective.

GRADUATE COURSES
Refer to the Graduate Bulletin.

Drama

In the College of Professional Studies and Fine Arts
The Department of Drama is a Member of the National Association of Schools of Theatre.

Faculty
Emeritus: Howard, Pivenmire, Powell, Sellman
Chair: McKerrow (Acting)
Professors: Ambler, Annas, Harvey, Lessley, McKerrow, Owen, Salzer, Stephenson
Associate Professor: Fields
Assistant Professors: Belinghiere, Christian, Reid
Lecturer: Harvey, A.C.

Offered by the Department
Master of Arts degree in drama.
Master of Fine Arts degree in drama.
Major in drama with the A.B. degree in applied arts and sciences.
Teaching major in drama for the single subject teaching credential in English.
Minor in drama.

Drama Major

With the A.B. Degree in Applied Arts and Sciences
All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements." A minor is not required with this major.

General
Preparation for the major. Drama 105, 110, 120, 130, 231, 240, and 250. (21 units.)
Upper Division Writing Requirement. Passing the University Writing Examination or English 305W or 500W with a grade of C (2.0) or better.
Major. A minimum of 41 upper division units in drama to include Drama 420, 440, 442 (eight units of Drama 442 must be taken prior to graduation), 457, 458 or 459, 460A-460B, and 15 units of electives in drama selected with the approval of the adviser.

Emphasis in Children's Drama
Preparation for the major. Drama 105, 110, 120, 130, 231, 240, 250 and 255. (24 units.)
Upper Division Writing Requirement. Passing the University Writing Examination or English 306W or 500W with a grade of C (2.0) or better.
Major. A minimum of 43 upper division units to include Drama 310, 329A or 329B, 420, 440, 442 (eight units of Drama 442 must be taken prior to graduation), 457, 460A, 460B, 480, 511, 515; Elementary Education 512 (three units); and three units selected from Drama 431, 434, 458, 532 or 545A.

Emphasis in Design for Drama
Preparation for the major. Drama 105, 110, 120, 130, 231, 240, and 250 (21 units.)
Upper Division Writing Requirement. Passing the University Writing Examination or English 304W with a grade of C (2.0) or better.
Major. A minimum of 41 upper division units to include Drama 420, 440, 442 (eight units of Drama 442 must be taken prior to graduation), 457, 458 or 459, 460A-460B, 540, 552, 545A, and select either 448, 545B, 546 or 554.
Emphasis in Acting

Preparation for the major. Drama 105, 110, 120, 130, 231, 240, and 250. (24 units.)

Upper Division Writing Requirement. Passing the University Writing Examination or English 305W with a grade of C (2.0) or better.

Major. A minimum of 44 upper division units in drama to include Drama 420, 434, 440, 442 (eight units of Drama 442 must be taken prior to graduation), 457, 458 or 459, 460A, 460B, 532, 533A-533B, 551, and select either 310, 326, 330 or 431.

Emphasis in Directing

Preparation for the major. Drama 105, 110, 120, 130, 231, 240, and 250. (21 units)

Upper Division Writing Requirement. Passing the University Writing Examination or English 305W with a grade of C (2.0) or better.

Major. A minimum of 50 upper division units in drama to include Drama 420, 431, 434, 440, 442 (eight units of Drama 442 must be taken prior to graduation), 457, 458 or 459, 460A-460B, 532, 533A, 545A, 552, and select either 326, 515 or 551.

Emphasis in Design for Television

Preparation for the major. Drama 105, 120, 240, 250, Telecommunications and Film 120, 122, 123, and 260 or 280. (Prerequisites for Telecommunications and Film 260 and 280, Telecommunications and Film 110 and 121, are waived for students in this emphasis.) (24 units.)

Upper Division Writing Requirement. Passing the University Writing Examination or English 305W with a grade of C (2.0) or better.

Major. A minimum of 39 upper division units to include Drama 440, 442 (eight units of Drama 442 must be taken prior to graduation), 448, 452, 540, 545A, 545B, Telecommunications and Film 315, 401, 550A-550B; and select either Drama 546 or three units of Telecommunications and Film 499.

Drama Major

For the Single Subject Teaching Credential in English

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the College of Education.

This major may be used by students in teacher education as an undergraduate major for the A.B. degree in applied arts and sciences.

Preparation for the major. Drama 105, 110, 120, 130, 231, 240, 250. (21 units.)

Upper Division Writing Requirement. Passing the University Writing Examination or English 500W with a grade of B (3.0) or better.

Major. A minimum of 26 upper division units to include Drama 310, 420, 440, 457, 460A, 460B, 480, 545A, and three units in English selected from English 541A, 541B, and approved sections of 527. In addition the student must complete eight units of Drama 442 prior to graduation.

Credential requirements. English 100, 200; three upper division units in linguistics selected from Linguistics 410, 520, 524; and three upper division units in English selected from English 533, 546. (12 units.)

"The major for the Single Subject Teaching Credential has been submitted to the Commission on Teacher Credentialing. Consult department to verify current program requirements."

Drama Minor

The following courses are prerequisite to the drama minor and do not count toward the 24 units required for the minor: Drama 105, 110 and 120 (9 units).

The minor in drama consists of a minimum of 24 units in drama to include Drama 130, 231, 240, 250, 242, 457, 458 or 459, and 460A or 460B.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

LOWER DIVISION COURSES

105. Introduction to the Theatre (3) I, II
Theory and practice in the theatre, including its literary, critical, technical and artistic aspects viewed against historical backgrounds. Students required to participate in a minimum of five hours of related theatre experience.

110. Voice and Diction for the Theatre (3) I, II
Prerequisite: Drama 105.
Exercises and drills to improve the quality, flexibility and effectiveness of the speaking voice leading to good usage in standard American speech. Preparatory to further courses in drama.

120. Dramatic Heritage (3) I
Three lectures and attendance at selected performances. Survey of dramatic literature from classical to the modern period, including classical, medieval, Renaissance, Restoration, neoclassical, romantic, realistic and modern plays.

130. Elementary Acting (3) I, II
Prerequisite: Drama 110.
Development of individual's ability to express thought and emotion through effective use of the voice and body. These fundamental skills may be applied to stage, radio, and television acting. In addition to classroom experience, students will participate in 24 hours of related activity.

147. Sound in the Theatre (3) I
Two lectures and three hours of laboratory.
Techniques, theory, and procedures necessary to develop sound, music, and effects integrated into theatre production.

231. Intermediate Acting (3) I, II
Two lectures and two hours of activity.
Prerequisite: Drama 130.
Continuation of Drama 130, emphasizing application of fundamental skills to problems of emotion, timing, characterization, and ensemble acting.

232. Movement and Mime for the Theatre (3) I
Two lectures and three hours of laboratory.
Prerequisite: Drama 105.
Basic disciplines of locomotor and axial body movement for the stage director and actor; introduction to mime. The relationship between body expression and character portrayal.

240. Dramatic Production (3) I, II
Two lecture-demonstrations and three hours of laboratory.
Prerequisite: Drama 105.
Technical practices and organization of production for theatre and television. Practice in drafting and construction of scenery for the college productions.

250. Elementary Stage Costume and Makeup (3) I, II
Two lecture-demonstrations and three hours of laboratory.
Prerequisite: Drama 105.
Basic theories, techniques, and procedures of costume production and makeup application for stage, film, and television. Practical training in the construction of stage costumes and application of makeup for departmental productions. One building or running crew required.

255. Children's Theatre (3) I

266. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.
301. Management of Drama Activities (1) I, II
Three hours.
Planning, preparation, management and supervision of drama tournaments, festivals and other interscholastic and intrascholastic activities under the supervision of the drama staff. Maximum credit two units.

310. Creative Drama (3) I, II
Instruction and training in the principles and techniques of creative dramatization for work with children in the classroom and recreation. Emphasis on the development of the child emotionally and socially through dramatic improvisation.

320. Speaking the Classical Theatre (3) I, II
Prerequisites: Drama 110, 231
Techniques of vocal expression in the theatre, primarily in Shakespeare and classical drama. Emphasis on individualized instruction and vocal problem solving.

325. Dramatic Works: Production Laboratory (3) Cr/Nc I, II
Nine hours of laboratory.
Staging of full-length plays in traditional and experimental productions. Maximum credit six units.

326. Theory of Production for the Musical Stage (3)
Prerequisites: Drama 231 and consent of instructor.
Theory and principles of production of modern musicals.

327. Movement Repertory for the Musical Theatre (3) I, II
One lecture and four hours of activity.
Prerequisites: Drama 231 and consent of instructor.
Basic performing techniques and movement repertory for the actor-singer-dancer in musical theatre production.

328A-328B. Children's Theatre Workshop (3-3) Cr/Nc
Prerequisites: Drama 255 and consent of instructor.
Production of plays for child audiences, with emphasis on elementary and junior high levels.
Practical experience through participation in university-sponsored productions.

330. Accents and Dialects for the Stage (3) II
Prerequisite: Drama 130
Various accents and dialects most frequently occurring in stage productions.

420. Play Analysis (3) I, II
Prerequisites: Drama 105 and 120
Representative dramas for the stage are read, discussed and analyzed in writing in terms of environment, structure, action, character and style.

431. Workshop in Improvisational Acting (3) I
Prerequisite: Drama 231
Theories and principles of improvisational acting.

434. Audition Techniques for the Actor (3) II
Two lectures and two hours of activity.
Prerequisite: Drama 231
Techniques of auditioning and interviewing in the theatre: selecting audition piece, rehearsing, and performing auditions. Instruction in preparing resumes and photographs for profession.

440. Scenic Design (3) I
Prerequisite: Drama 240
Techniques and procedures in the application of principles of design, color and perspective in the designing and painting of scenery for various types of productions for stage, television and cinema.

442. Theatre Workshop (1-6) I, II Cr/Nc (3-6) S Cr/Nc
Two hours of activity per unit.
Practical theatre production experiences to include set crew and construction, costume crew and construction, make-up, lighting, sound, theatre management, or other faculty approved areas. Must be repeated for a total of eight units.

445. Rehearsal and Performance (1-6) Cr/Nc
Two hours per unit.
Practical experience in departmental public performance. Maximum credit six units.

448. Advanced Dramatic Production (3)
Two lectures and three hours of laboratory.
Prerequisites: Drama 240
Scenery drafting and construction, with attention to the multiple-set play. Planning of scenery construction and rigging for stage and television productions.

452. Costume History and Design for the Theatre (3) I
Two lectures and three hours of laboratory.
Prerequisites: Drama 260
Chronological study of clothing and theatrical dress from earliest times to the present, with practical applications in terms of contemporary costume design for the theatre. Egyptian through Cavalier periods. Elements and principles of costume design.

457. Stage Direction (3) I, II
Two lectures and three hours of laboratory; attendance of one-act plays and selected performances.
Prerequisites: Drama 231, 420, and consent of instructor.
Planned for prospective directors of plays in schools, colleges, and community theatres. A comprehensive study of the various problems confronting a stage director.

458. Stage Direction: Scenes (3) I, II
Two lectures and two hours of activity; attendance of one-act plays and selected performances.
Prerequisites: Drama 457 and consent of instructor.
Experience and group evaluation in directing scenes in acting classes.

459. Stage Direction: One-act Plays (3) I, II
One lecture and four hours of activity; attendance of one-act plays and selected performances.
Prerequisites: Drama 457 and consent of instructor. (May be substituted for Drama 458 as requirement in directing.)
Experience and group evaluation in directing one-act plays before departmental or public audiences.

460A-460B. History of the Theatre (3-3) I, II
The theatre from primitive times to the present. Special attention will be given to the theatre as a mirror of the social and cultural background of the various countries and periods in which it is studied. Drama 460B may be taken without 460A.

475. Theatre Management and Promotion (3) II
Two lectures and three hours of laboratory.
A practical and correlated study of the college, university, high school and children's theatre; principles of organization, programming, production, budgets, ticket office, and promotional procedures.

480. Methods and Materials of Instruction (2) I
Professional preparation emphasizing organization and practices in the teaching of Dramatic Arts.

496. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

499. Special Study (1-3) I, II
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.
UPPER DIVISION COURSES
(Also Accepted for Advanced Degrees)

511. Styles in Creative Drama (3) I, II
Prerequisite: Drama 310.
Advanced techniques and procedures in the teaching of creative drama. Lectures and reading on the application of creative drama with emphasis on the different styles of creative drama available to the practitioner. Practical experience through work with children.

515. Directing for Children's Theatre (3) II
Prerequisite: Drama 255.
Staging and technical problems relative to the production of plays for children; casting procedures, blocking and characterization principles, rehearsal and scenic techniques. Practical experience through university-sponsored productions.

520. History of Musical Theatre (3) I
Prerequisite: Drama 460A.
Musical theatre from early Viennese operettas to musicals of modern times; representative works.

532. Advanced Acting and Directing (3) I
Prerequisite: Drama 231. Acting students admitted by audition only; directing students by interview. Problems in characterization in contemporary drama, and in plays of Ibsen, Strindberg, Chekhov, and Shaw. (Formerly numbered Drama 432.)

533A, 533B. Theory and Styles in Acting and Directing (3-3)
Prerequisite: Drama 231.
Acting and directing problems in theory and style related to the production of plays from great periods in theatre history, with attention to characterization, dramatic values, creative directing and production approaches. Semester I: Shakespearean tragedy and history, melodrama, and farce. Semester II: Greek tragedy, Shakespearean comedy.

540. Styles in Scenic Design (3) II
Prerequisite: Drama 440.
History of scenic design and the application of contemporary styles to various types of dramatic production for stage, television and cinema.

545A, 545B. Stage Lighting (3-3) I, II
Two lectures and three hours of laboratory
Prerequisite: Drama 545A is prerequisite to 545B.
Light, color, lighting instruments, and control equipment, including the design and planning of lighting for plays.

546. Computer Systems and Special Effects Techniques In Stage and Television Lighting (3)
Two lectures and three hours of laboratory
Prerequisite: Credit or concurrent registration in Drama 545B.
Functional study of computer systems in stage and television lighting with emphasis on realizing effective methods of using such systems in production.

551. Costume, Movement, and Manners (3) I
Prerequisite: Drama 250.
Interrelationship of period costumes and the movement and manners of the time; and their application on the stage.

552. Costume History and Design for the Theatre (3) II
Two lectures and three hours of laboratory
Prerequisite: Drama 452.
A continuation of Drama 452 to include chronological study of clothing and theatrical dress from the Restoration period to 1930, with practical applications in terms of contemporary costume design for the theatre.

554. Costume Construction Techniques (3)
Two lecture-demonstrations and three hours of laboratory
Prerequisite: Drama 250.
Period pattern drafting, draping, cutting, construction. Wig, millinery, armor, mask, accessory construction. Costume paint and dye techniques.

555. Musical Theatre Dance Repertory (2) I
Four hours of activity.
Prerequisite: Drama 327.
Musical theatre dance repertory styles and forms for the actor-singer-dancer-director as they pertain to arranged composition of a musical theatre production.

559. Musical Theatre Stage Direction: One Acts (3) II
One lecture and four hours of activity.
Prerequisite: Drama 459.
Experience and group evaluation in directing scenes and one-act musical theatre performances before departmental or public audiences; attendance at musical theatre performances and other selected musical presentations. Problems confronting a musical theatre stage director.

596. Selected Topics in Drama (1-3) I, II
Prerequisite: Twelve units in drama.
A specialized study of selected topics from the areas of drama. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor’s degree. Maximum credit six units.

GRADUATE COURSES
Refer to the Graduate Bulletin.
Economics

In the College of Arts and Letters

Faculty
Emeritus: Anderson, Chadwick, McClintic, Turner
Chair: Barckley
Professors: Babilot, Barckley, Clement, Flagg, Gifford, Jencks, Kartman, Leasure, Madhavan, Nam, Neuner, Popp, Poroy, Sebold, Venieris
Associate Professors: Boddy, Franz, Green, Grossbard-Schechtman, Hagerman, Hambleton, Stewart, Thayer
Assistant Professors: Seidman, Villallor, Vogl
Lecturers: Allen, Isaac, Ruoppert

Offered by the Department
Master of Arts degree in economics
Major in economics with the A.B. degree in liberal arts and sciences
Minor in economics.

Advising
All College of Arts and Letters majors are urged to consult with their department adviser as soon as possible; they are required to meet with their department adviser within the first two semesters after declaration or change of major.

Economics Major

With the A.B. Degree in Liberal Arts and Sciences
All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements." A minor or major, combined with this major.

Preparation for the major: Economics 101 and 102 and 201; one course from Mathematics 121, 140, 141 or 150, and Mathematics 107 or another computer-related course. (15-17 units)

Foreign Language Requirement: Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Refer to section of catalog on "Graduation Requirements."

Upper Division Writing Requirement: Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Upper Division Writing Requirement: Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major: A minimum of 24 upper division units. Six units of upper division credit in related fields may be counted toward the major if prior approval of the department's undergraduate adviser is obtained. The 24 units must include Economics 320, 321, and 347 or 351, plus 15 units of electives. Students are encouraged to complete the required courses during their junior year. Although there are no formal emphases within this major and any upper division course is recommended to any student majoring in this discipline, the department strongly recommends that all majors consult an undergraduate adviser. The following program areas have been devised to aid students in selecting their upper division courses.

Theoretical Economics: Students interested in building a theoretical background in economics are advised to take courses in alternative economic theories, history of thought and quantitative economics to include Economics 307, 311, 330, 333, 332, 335, 338, 360, 365, 386, 420, 421, 422, 453, 464, 474, 502, 505, 520, 555, 561, and 592.

Economics of Business and Government: Students interested in preparing for operational positions in business or government are advised to take courses from among Economics 360, 370, 380, 401, 422, 452, 453, 454, 456, 474, 475, 477, 482, 487, 489, 490, 502, 555, and 592.

Economics of Business and Government: Students interested in preparing for law school are strongly recommended to take courses from among Economics 370, 380, 401, 490 and 505. Also recommended are Economics 320, 332, 453, 454, 474, 477, 482, and 555.

General Economics: Students seeking a general background in the discipline are encouraged to take at least one course from each of the following: Economic History and


Students considering graduate school should consult an adviser.

Economics*

For the Single Subject Teaching Credential in Social Science

Economics is an area of concentration for the Social Science Major, a program leading to a secondary education credential in Social Science. The requirements are those established for the Social Science Credential, as shown in this section of the catalog under Social Science.

*The major for the Single Subject Teaching Credential has been submitted to the Commission on Teacher Credentialing. Consult department to verify current program requirements.

Economics Minor

The minor in economics consists of a minimum of 15 units in economics, 12 units of which must be in upper division courses. Students must select their 12 upper division units from the economics courses in one of the four areas described in the major. In addition, students may include Economics 320, 321, 347 or 541, in their chosen area. If the student selects General Economics, he/she must concentrate in one of its four areas.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

LOWER DIVISION COURSES

100. Contemporary Economic Problems (3) I, II
Investigates economic bases for such current problems as inflation, unemployment, economic policy, consumer protection, poverty, discrimination, urban and environmental deterioration, and international domination. Examines such policies as fiscal-monetary policy, tax reform and government controls and provision of services.

101. Principles of Economics (3) I, II
An introduction to principles of economic analysis, economic institutions, and issues of public policy in this semester the emphasis is upon macroeconomics and national income analysis, money and banking, business cycles, and economic stabilization.

102. Principles of Economics (3) I, II
An introduction to principles of economic analysis, economic institutions, and issues of public policy in this semester the emphasis is upon macroeconomics and national income analysis, money and banking, business cycles, and economic stabilization.

201. Statistical Methods (3) I, II
Prerequisite: Qualification on the Mathematics Placement Examination. Introduction to descriptive statistics, statistical inference, correlation, index numbers, and time series. Students with credit or concurrent registration in another statistics course will be awarded a total of four units for the two (or more) courses.

296. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

UPPER DIVISION COURSES

(Intended for Undergraduates)

300. Honors Course (1-3)
Refer to Honors Program.

307. Quantitative Economics (3) I, II
Prerequisites: Economics 101, 102, and any successfully completed calculus course.

The quantitative approach to economic problems: The use of mathematics in economic analysis. (Formerly numbered Economics 447.)
311. History of Economic Thought (3)  
Prerequisites: Economics 101 and 102.  
The development of economics. Contributions of schools of thought and individual writers  
are examined with regard to their influence on economic theory and policy.

313. Marxian Economic Theory (3)  
Prerequisites: Six units in economics.  
Analysis of the theories of Marx. Engels, Lenin, Mao Tse-tung, Baran, Sweezy and others as  
they pertain to the periods in which they were conceived and to modern times.

320. Intermediate Economic Theory (3) I, II  
Prerequisites: Economics 101, or Economics 100 with approval of department.  
Economic theory with special reference to national income analysis and the theory of  
investment.  

321. Intermediate Economic Theory (3) I, II  
Prerequisites: Economics 102 or Economics 100 with approval of department.  
Economic theory with special reference to the theory of the firm and the industry; value and  
distribution.

330. Comparative Economic Systems (3)  
Prerequisites: Economics 100 or 101 or 102.  
The economic aspects of laissez-faire and regulated capitalism, cooperatives, socialism,  
communism, nazism, fascism. Criteria for evaluating economic systems. The individual  
and government in each system. Planning in a liberal capitalist society.

336. Economic History of Emerging Nations (3)  
Prerequisites: Economics 100 or 101.  
Economic development from the Middle Ages to the present. Particular attention is given to  
the impact of the Industrial Revolution on national economies, especially on England's  
commerce and industry.

338. Economic History of the United States (3)  
Prerequisites: Economics 100 or 101.  
American economic development and national legislation. Studies of agriculture, industry,  
the labor force, and national output. (Formerly numbered Economics 338B.)

347. Research Design and Method (3)  
Prerequisites: Economics 101, 102 and 201. Economics 320 and 321 recommended.  
Instruction in the practical application of the various techniques of economic research to a  
range of problems typically encountered in the economics profession: sources and limitations  
of basic data, survey research, industry studies, economic forecasting, national impact studies,  
area and regional studies.

360. International Economic Problems (3)  
Prerequisites: Economics 101 and 102. Not open to students with credit in Economics 561.  
International problems, economic communities, organizations, and other selected topics.

365. Economics of Underdeveloped Areas (3)  
Prerequisites: Economics 102.  
The nature and causes of economic underdevelopment. Problems of and policies for the  
economic development of underdeveloped areas of the world.

370. Government and Business (3)  
Prerequisites: Economics 100 or 102.  
Governmental activities affecting business; the state as an entrepreneur and manager;  
governmental assistance to business; governmental regulation of business in its historical,  
legal and economic aspects, including recent developments in the United States and abroad;  
proposed policies.

380. Labor Problems (3)  
Prerequisites: Economics 100 or 101 or 102.  
Labor organizations and their policies; wages, strikes, unemployment, social insurance,  
child labor, labor legislation, plans for industrial peace, and other labor problems.

401. Public Finance (3)  
Prerequisites: Economics 101 and 102.  
Principles and practices of taxation and public expenditures. Economic effects of public  
spending, debt and taxation. Financing social security and other services. Fiscal policy and  
prosperity. Relation to inflation and deflation. Special emphasis on social problems involved.

420. Topics in Macroeconomics (3) I  
Prerequisites: Economics 320 and 321; Economics 307 or Mathematics 142.  
Microfoundations of macroeconomic analysis: Walras' law, macrotheory when markets do  
not clear, alternative theories of expectations, macrodynamic and growth theory. Implications  
for inflation, unemployment, and the effectiveness of fiscal and monetary policy.

421. Applied Microeconomics (3) II  
Prerequisites: Economics 321; Economics 307 or Mathematics 142.  
Relation of price and producer behavior using mathematical optimization techniques. Mathe-  
matical approaches to oligopoly, bargaining theory and to policy issues.

422. Business Cycles (3)  
Prerequisites: Economics 101 and 102.  
Fundamental factors in economic fluctuations. Examination of business cycle theories, and  
various policy proposals for economic stabilization. A consideration of current economic  
conditions and an examination of methods employed in preparing national economic forecasts.

452. Economics of Energy Resources (3)  
Prerequisites: Six units of economics.  
Economic structure of energy supply in the United States: electric power, fossil fuels,  
nuclear energy. Economic potential of alternative energy sources. Public policy issues: oil  
imports and self-sufficiency, energy costs, conservation, and curtailment; energy growth and its  
environmental impact.

453. Economics and Ecology (3)  
Prerequisites: Economics 101 and 102.  
Relation of ecological problems to basic economic institutions. Examination of the apparent  
conflict between economic needs and ecological requirements. Economics of air, fresh water,  
ocean, and land pollution, overpopulation and natural resource utilization. Investigation of  
possible solutions.

454. Economics of the Ocean (3)  
Prerequisites: Economics 101 and 102.  
Economic analysis of fisheries, seabed resources, shipping lanes, allocation of the coastal  
zone, and ocean pollution. Economic implications of alternative legal arrangements concerning  
the ocean.

458. Urban and Regional Economics (3)  
Prerequisites: Economics 101 and 102.  
Major influences on the economic conditions of urban and nonurban areas; specific urban  
problems including housing, land use, and growth. Discussion of San Diego problems.

464. Economic Problems of Latin America (3)  
Prerequisites: Economics 100 or 101 or 102.  
Economic development, institutions, and problems of Latin America.

465. Economic Problems of South and East Asia (3)  
Prerequisites: Economics 100 or 101 or 102.  
Economic development, institutions, and problems of China, India and Pakistan, Japan, and  
Southeast Asia.

474. Economic Concentration and Monopoly Power (3)  
Prerequisites: Economics 101 and 102.  
The implications of economic concentration and monopoly. The evaluation of mergers,  
collaborations and other forms of monopoly power in terms of social and economic goals.  
Attempts to control monopoly power by antitrust laws, by policies regarding competitive  
practices and by other means.
475. Industry Studies (3)
Prerequisite: Economics 101 and 102.
Evaluations of the structure, conduct, and performance of selected industries in terms of social and economic goals.

476. Public Utilities (3)
Prerequisite: Economics 101 and 102.
Economics and regulation of utility enterprises, growth, pricing, demand and cost behavior, financing, regulatory principles and techniques. Public power and other current policy issues.

482. Collective Bargaining (3)
Prerequisite: Economics 101 and 102.
Structures of labor relations, management and union problems; public policy and collective bargaining; simulation of collective bargaining experiences.

483. Comparative Labor Problems (3)
Prerequisite: Economics 101 and 102.
Comparative study of labor relations systems and labor movements in both advanced and developing nations. Individual study of a particular country of the student's choice.

484. Economics of Health and Education (3)
Prerequisite: Economics 100 or 101 or 102.
Production and distribution of health, education, and training. Issues of equity and financing, benefits and losses from schooling and ill health. Health and educational investments related to aging.

485. Population and Economic Growth (3)
Prerequisite: Economics 100 or 101 or 102.
Interrelationship between the components of population change (fertility, mortality, and migration) and economic growth in developed and underdeveloped areas.

490. Money and Banking (3) I, II
Prerequisite: Economics 100 or 101 or 102.
The elements of monetary theory. History and principles of banking with special reference to the banking system of the United States.

495. Economics Internship (3) I, II Cr/NC
Prerequisite: Consent of instructor.
Internship with business firms, non-profit organizations and government agencies. Work done under joint direction of activity supervisor and instructor. Project report and internship conferences required. Maximum credit six units.

496. Experimental Topics (1-3)
Prerequisite: Consent of instructor.
Selected topics in economics. May be repeated with approval of the instructor. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units.

499. Special Study (1-3) I, II
Prerequisite: Consent of instructor.
Individual study. May be repeated for a maximum of six units; maximum credit in 499 limited to six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

502. Public Economics (3)
Prerequisite: Economics 321 or 401.
General equilibrium. Externalities of consumption and production; their impact on allocative efficiency. Theory of social wants and public goods supply. Theoretical treatment of individual and community preference ordering and decision making. Proposals for improving the allocation of resources.

505. Welfare Economics (3)
Prerequisites: Economics 102 and 321.
Theories of individual and social well-being; economic and ethical bases of optimum welfare arrangements; individual values and social decision making; tests of improvement, interdependence and externalities; public and private sectors, properties of social welfare functions.

520. Advanced Economic Theory (3)
Prerequisite: Economics 320.
Recent contributions to the advanced theory of the firm, consumer demand, employment and growth.

541. Econometrics (3)
Prerequisite: Economics 201 and 307 or Mathematics 142.
Measurement in economics. The construction and testing of simple economic hypotheses. Use of economic models involving multiple-regression analysis.

555. Economic Analysis of Environmental Quality (3) II
Prerequisites: Economics 321 and Mathematics 121 or 141 or 150.
Examination of materials balance, interface between economic and ecological systems, and comprehensive waste residuals management. Economic analysis of population growth and environmental degradation, preservation vs. development issues, global environmental problems and international law.

561. International Trade Theory (3)
Prerequisites: Economics 320 and 321.
The neoclassical analysis of trade and commercial policy.

562. International Economic Expansion and Dependence (3)
Prerequisite: Economics 313 or 365 or 464.
Explores various theories of imperialism and dependence, the behavior of multinational corporations, and role of state from Marxist and other perspectives. Theories examined in terms of experience of specific countries (e.g., Mexico).

565. U.S.-Mexico Economic Relations (3)
Prerequisite: One course in economics.
Mexico's socioeconomic development since World War II. Problem areas affecting the U.S. including foreign trade, multinational corporations, energy, migration patterns and border relations.

592. International Monetary Theory and Policy (3)
Prerequisite: Economics 320 or 490.
Balance of payments, international capital movements and foreign exchange in relation to current theories and policies.

596. Experimental Topics (3)
Prerequisite: Consent of instructor.
Intensive study in specific areas of economics. Topics to be announced in the Class Schedule. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units.

GRADUATE COURSES
Refer to the Graduate Bulletin.
Approved Credential Programs

1. Multiple subjects credential
   - Teach in any self-contained classroom, kindergarten through twelfth grade.
2. Single subject credential
   - Teach single subject area in grades kindergarten through twelfth.
3. Community college instructor credential
   - Teach in grades thirteen and fourteen, any course in an occupational or subject matter area which appears on the credential document.

Certificate in Children’s Literature

This certificate attests that the student has successfully completed 18 units (minimum GPA 3.0) of planned, advised, coherent, and articulated study in the field of literature for children. Prerequisites include admission to the University and to upper division or graduate standing. The Certificate in Children’s Literature may be earned with a specialization either in Education or in English and Comparative Literature.

Specialization in Education. Nine units from courses in group A, six units from group B, and three units of an appropriate elective chosen with the approval of a faculty adviser.

Specialization in English and Comparative Literature. Nine units from courses in group B, six units from group A, and three units of an appropriate elective chosen with the approval of a faculty adviser.

Group A, Education: Education 496*, Educational Technology and Librarianship 578, 596; Elementary Education 512, 522.

Group B, English and Comparative Literature: Comparative Literature 561 (when offered as European Children’s Literature), English 496*, 501, 528, 549.

Teaching/Service Credentials

The College of Education offers programs which lead to teaching, specialist, and services credentials. Students who desire to seek a credential should consult with departmental advisers in order to determine their status and needed requirements. Information on these credentials is available in the offices of the several departments of the College of Education and in the Credentials Office, College of Education.

The College of Education has obtained approval for programs leading to the following credentials:

School Service Authorized

Specialist Credentials

- Bilingual/CrossCultural
- Early Childhood*
- Reading Specialist
- Special Education
- Communication Handicapped (Dept. of Communicative Disorders)
- Physically Handicapped
- Learning Handicapped
- Severely Handicapped
- Gifted
- Visually Handicapped*

Service Credentials

- Administrative Services
- Clinical Rehabilitation Services (Dept. of Communicative Disorders)
- Library*
- Pupil Personnel
- School Psychology
- Health-School Nurse (School of Nursing)

* No students will be admitted into this program during the current academic year.

Admission to Teacher Education

Application for Admission

Students who plan to enroll in a credential program must make application for admission to that program through the appropriate department. The Multiple Subjects Credential is to be completed through the Elementary Education Department; the Single Subject Credential through the Secondary Education Department.

LOWER DIVISION COURSE IN EDUCATION

296. Experimental Topics (1-4)

Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

UPPER DIVISION COURSES IN EDUCATION

( Intended for Undergraduates)

301. Education and the American Society (3)
   - Analysis of conflicting value patterns; both institutional and noninstitutional, of education. Educational controversies, community educational agencies, equal rights, the international scene and futurism and progress.

375. Principles of Adult Education (2) I, II
   - History, philosophy, objectives and administration of adult education.

376. Methods and Materials in Adult Education (2) I, II
   - Identification, selection and utilization of teaching methods, techniques and materials appropriate for adults.

377. Psychological Foundations of Adult Education (2)
   - Educational psychology and developmental problems of adults.

380. Community College Occupational Education (3) I, II, S
   - Prerequisite: Two years of occupational experience in a community college subject matter area.
   - Principles, practices, scope and functions of education.

381. Community College Occupational Curriculum (3) II, S
   - Prerequisite: Education 380.
   - Materials and methods of instruction, curriculum development and evaluation.

382. Directed Teaching (4) Cr/NC
   - Prerequisite: Education 380, 381 or 565.
   - Systematic observation, participation, and teaching under supervision in an occupational area in a community college. Application to take this course must be made in preceding semester.
383. History and Philosophy of Education (2) I, II
   Historical backgrounds and underlying philosophies upon which the public school system
   has been established. Meaning of education, educational aims and values, and democracy
   and education.

387. Problems in Education (Credit to be arranged) Extension I, II
   Offered only in Extension.
   Prerequisite: Consent of instructor.
   Class study of specially selected problems in education. Does not apply to pattern require-
   ments for credentials.

496. Experimental Topics (1-4)
   Selected topics. May be repeated with new content. See Class Schedule for specific
   content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a
   bachelor's degree.

UPPER DIVISION COURSES IN EDUCATION
(Also Acceptable for Advanced Degrees)

511. Reading Diagnosis (3)
   Prerequisites: Valid teaching credential and consent of instructor.
   Diagnosis of reading difficulties and exploration of remedial techniques.

565. Occupational Student (3) S
   Prerequisite: Education 380 or 381.
   The learning process and individual differences, behavioral characteristics of youth, race
   and ethnic relations in the schools.

568. Human Relations and Counseling in Adult Education (1-3)
   Prerequisite: Possession of a valid teaching credential.
   Principles, procedures and issues appropriate to human relations and counseling in adult
   education.

590. Computer Solutions to Instructional Problems (3) I, II
   Prerequisites: Educational Technology and Librarianship 571; admission to a credential
   program or a teaching credential or experience in teaching.
   Using the computer, especially the microcomputer, as an instructional tool. Programming
   techniques and instructional design.

595. Topics in Adult Education (1-3) II
   Prerequisite: Possession of a valid teaching credential.
   Designed to meet the needs of individuals or groups of adult educators who wish to study
   special problems in adult education. May be repeated with new content. See Class Schedule
   for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable
to a bachelor's degree. Maximum credit six units.

GRADUATE COURSES IN EDUCATION
Refer to the Graduate Bulletin.

Counselor Education
Faculty
Emeritus: Malcolm, Manjos
Chair: Cummins
Professors: Bruce, Carnevale, Chamley, Cummins, Feinberg, Hawley, Jones, McFarlane,
Miller, Ramage, Senaur
Associate Professors: Howard, Jacobs, Patton, Thompson
Assistant Professors: Cochran, Robinson

Offered by the Department
Master of Science degree in counseling.
Master of Science degree in rehabilitation counseling.
Pupil Personnel Services Credential.
School Psychology Credential.

Pupil Personnel Services Credential
San Diego State University offers programs leading to the Pupil Personnel Services Creden-
tial. This credential authorizes the holder to function as a counselor or other pupil personnel
specialist in grades K through 12. For information concerning this credential, the student is
referred to the Department of Counselor Education.

Requirements
1. Admission to the University and to the Department of Counselor Education. Formal applica-
tion also must be made to the Department of Counselor Education early in the semester
prior to anticipated enrollment.
2. There are 44 competencies which must be satisfied for this credential. These competencies
are met in the following courses: Education 690, Counselor Education 610A, 610B, 615, 620,
640, 640L, 650, 650L, 660, 660L, 670, 670L, 710A-710B, 730, and 740. Students who have
had comparable course work outside the Department of Counselor Education and who
desire to apply for the PPS Credential through this department are required to provide
evidence, in each case to the satisfaction of the relevant faculty member, that the
designated competencies have been met.
3. Included as part of the above competencies is a field work requirement which involves
special experiences with pupils of divergent age levels. The specific nature of
the field work will vary according to the background of each student.
4. A master's degree is not a requirement for this credential: however, courses in the program
described above may be acceptable also for the Master of Science degree in Counseling
for which satisfactory completion of the Comprehensive Examination in Counselor Educa-
tion and a minimum of 36 acceptable graduate units (27 units in residence) are required.

School Psychology Credential
San Diego State University offers a program leading to the School Psychology Credential.
The credential authorizes the holder to function as a school psychologist in grades K through
12. For information concerning this credential, the student is referred to the Coordinator of the
School Psychology Program in the Department of Counselor Education.

A school psychologist is a credentialed professional whose primary objective is the applica-
tion of scientific principles of learning and behavior to ameliorate school-related problems and
to facilitate the learning and development of children in the public schools of California. To
accomplish this objective the school psychologist provides services to children, teachers,
parents, community agencies, and the school system itself.

Requirements
1. Admission to the University and to the Department of Counselor Education.
2. The School Psychology Credential program is built around developing certain competen-
cies, which can be developed by completing the approved program for the Pupil Personnel
Services Credential, or equivalent, and taking the courses in the School Psychology
Program which includes Counselor Education 621, 641A-641B, 720, 752, 760, Education
511, and Special Education 500, 501, 510, or equivalent. Students who have had comparable course work outside the Department of Counselor Education and who desire to apply for the School Psychology Credential through the department are required to provide evidence that the designated competencies have been met.

3. Included as part of the above competencies is a field work requirement which involves cross-cultural field experiences with pupils of divergent age levels. The specific nature of the field experiences will vary according to the background of each student.

**UPPER DIVISION COURSES IN COUNSELOR EDUCATION**
(Intended for Undergraduates)

400. Counseling and the Helping Professions (3) I, II
Serves as an introduction to the field of counseling and introduces the student to those professions considered to be helping professions.

401. Theories and Processes of Personal Integration (3) I, II
Perspectives of and strategies for developing and maintaining a functional balance among intellectual, physical, emotional, and interpersonal aspects of daily living.

499. Special Study (1-3) I, II
Prerequisite: Consent of instructor. Open only to senior and graduate students in education who have shown ability to work independently. Individual study. Maximum credit six units.

**UPPER DIVISION COURSES IN COUNSELOR EDUCATION**
(Also Acceptable for Advanced Degrees)

585A. Human Sexuality for Counselors (3) S
Prerequisite: Upper division course in human sexuality. Dimensions of human sexuality that bear directly on role and function of helping professions. Human sexual development, sexual variations, sexual dysfunctions, intimate lifestyles, treatment modalities and sexual ethics. Fulfills MFCC licensure requirements.

585B. Dynamics of Adjustment Behavior (3) S
Prerequisite: Upper division course in abnormal psychology. Philosophies and dynamics of adjustment behavior, patterns and types of abnormal behavior, and treatment modalities. Fulfills MFCC licensure requirement.

596. Selected Studies (1-3) I, II
Prerequisite: Consent of instructor. A series of lecture and discussion sessions centering on current problems in counseling and guidance. Designed to serve the needs of any person desiring to keep informed of developments in this area. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable on a master's degree. (Formerly numbered and entitled Counselor Education 506, Guidance Conference.)

**GRADUATE COURSES IN COUNSELOR EDUCATION**
Refer to the Graduate Bulletin.

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**Educational Technology and Librarianship**

**Faculty**
Emerita: McAllister
Chair: Harrison
Professors: Gooier, Harrison, Rosset
Assistant Professors: Allen, Dodge, Sharpe

**Offered by the Department**
Master of Arts degree in education.
Minor in educational technology and librarianship.
Certificate in instructional Technology.
Library Services Credential.

**Educational Technology and Librarianship Minor**
The minor in educational technology and librarianship consists of a minimum of 15 units, 12 of which must be upper division selected from one of the following areas:
- Librarianship: Educational Technology and Librarianship 541, 546, 547, 548, and 596 when applicable.
- Educational Technology: Educational Technology and Librarianship 540, 541, 542, 544, 553, 571, and 596 when applicable.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

* Prerequisite does not apply to students seeking the minor only.

**Certificate in Instructional Technology**
To receive a Certificate in Instructional Technology, candidates, in addition to meeting all admissions requirements, must complete the following 12 units of course work:
- Educational Technology and Librarianship 540, 544, 571, plus three units from Educational Technology and Librarianship 541, 553, or 596.

**Library Services Credential**
San Diego State University offers curricula leading to the Library Service Services Credential. This credential authorizes the holder to serve as a school library/media specialist in grades kindergarten through 12. For information concerning the credential, the student is referred to the Department of Educational Technology and Librarianship.

* No students will be admitted into this program during the current academic year.

**Requirements for Admission**
1. Formal application to the Department of Educational Technology and Librarianship.
2. Admission to a basic teaching credential program.
3. Possession of a basic teaching credential.
4. Achieve a satisfactory score on the GRE General (Aptitude) test.
The following program elements are required of all library credential candidates:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>ETL 445</td>
<td>School Library Media Programs</td>
<td>3</td>
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<tr>
<td>ETL 483</td>
<td>Directed Teaching: Ed Tech and Librarianship</td>
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<td>ETL 532</td>
<td>Design and Production of Instructional Materials</td>
<td>3</td>
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<td>ETL 540</td>
<td>Instructional Technology</td>
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<td>ETL 546</td>
<td>Basic Reference Materials</td>
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<td>ETL 547</td>
<td>Selection of Instructional Materials</td>
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<tr>
<td>ETL 548</td>
<td>Cataloging and Classification</td>
<td>3</td>
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<tr>
<td>ETL 675</td>
<td>Seminar in the Administration of Instructional Media Centers</td>
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<tr>
<td>ETL 678</td>
<td>Literature for Children</td>
<td>3</td>
</tr>
<tr>
<td>ETL 679</td>
<td>Literature for Adolescents</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Units: 31

LOWER DIVISION COURSE IN EDUCATIONAL TECHNOLOGY AND LIBRARIANSHIP

201. Use of the Library (2) I, II
Resources and facilities of San Diego State University Library including interpretation and use of its principal information retrieval mechanisms.

UPPER DIVISION COURSES IN EDUCATIONAL TECHNOLOGY AND LIBRARIANSHIP

(Also Acceptable for Advanced Degrees)

400. Technology and Lifelong Learning (3) I, II
Communication models and uses of technology as they impact on the many teaching-learning situations. Examination of role of educator as human communicator, technologist, and social change agent.

404. Instructional Media, Equipment and Production (1) I, II Cr/NC
Two hours of activity.
Basic audiovisual equipment operation, production of inexpensive instructional materials, and application of learning theory to the utilization of instructional materials.

445. School Library Media Programs (3) I, II
Backgrounds of media centers in education. Objectives, standards and activities involved in planning, organizing, administering and integrating the school library media program with the instructional program of the school.

483. Directed Teaching: Educational Technology and Librarianship (2-4) I, II Cr/NC
Prerequisites: Admission to teacher education and concurrent completion of a teaching minor in educational technology and librarianship.
Systemic observation and participation in library and audiovisual service under supervision in a school library and/or teaching materials center. A weekly seminar or conference is required.

496. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

499. Special Study (1-3) I, II
Prerequisite: Consent of instructor. Open only to senior and graduate students in education who have shown ability to work independently.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES IN EDUCATIONAL TECHNOLOGY AND LIBRARIANSHIP

532. Design and Production of Instructional Materials (3) I, II
Nine hours of laboratory.
Planning, preparing and using instructional materials with a wide variety of learners. Transparencies, lettering aids, color slides, audio cassettes, simulations, and portable video.

540. Instructional Technology (3) I, II, S
Six hours of activity.
Role of instructional systems development in education and training: issues in instructional technology, self-instructional programs, competency-based instruction, new technologies of instruction and training.

541. Media Production (3) I, II
Nine hours of laboratory.
Prerequisite recommended: Educational Technology and Librarianship 404.
Planning and production of media for instruction and training. Cost estimation and control, facilities design, legal requirements, production practices and personnel, storyboarding and scripting.

542. Advanced Production Techniques (3)
Nine hours of laboratory.
Prerequisite recommended: Educational Technology and Librarianship 541.
Application of communication principles, skills, and techniques pertaining to the design and production of light and heat sensitive instructional materials to problems of educational communication and instructional development.

544. Instructional Design (3) I, II
Six hours of activity.
Systematic approach to instructional design. Review of research and theory in instructional strategy development. Analysis, design and development of instructional and training products and programs.

546. Basic Reference Materials (3) I, II
Six hours of activity.
General reference books, bibliographies and source materials with emphasis on their use in the school library media center.

547. Selection of Instructional Materials (3) I, II
Six hours of activity.
Prerequisite recommended: Educational Technology and Librarianship 445.
Selection criteria and development of written policy statements. Annotations, reviewing media, standard catalogs and bibliographies.

548. Cataloging and Classification (3) I, II
Two lectures and three hours of laboratory.
Prerequisite recommended: Educational Technology and Librarianship 445.
A practical approach to organizing instructional materials in school library media centers. Descriptive cataloging, classification, and choice of subject headings. Basic knowledge of typing helpful.

553. Workshop in Educational Television (3)
Nine hours of laboratory.
The procedures and theories of television production as it pertains to closed circuit and instructional use of television. The selection and utilization of program content and the method of presenting material through the television medium will be discussed and demonstrated. Not open to students with credit in Telecommunications and Film 320.

571. Introduction to Computers in Education (3) I
One lecture and six hours of laboratory.
Prerequisite required for preservice students, recommended for inservice students. Information Systems 180 or Mathematics 107 or Engineering 120.
Introduction to uses of computers in education and training. History, present and future hardware and software, social impact, costs, interface between instruction and software development, and survey of computer applications in education and training.
578. Children's Literature on Film (3)  
Six hours of activity  
Current and classic children's literature as expressed on film. Selection criteria, sources, and identification of guidance and film-related activities.

596. Workshop in Educational Technology and Librarianship (1-3)  
Selected problems in educational technology and librarianship. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units. See Class Schedule for specific content.

Graduate Courses in Educational Technology and Librarianship  
Refer to the Graduate Bulletin.

Elementary Education  
Faculty  
Chair: Murphy (Acting)  
Professors: Becker, Berg, Burnside, Charles, Gast, Gates, Gega, Goodson, Inskeep, Kendall, Moreno, Murphy, Nagel, Retson, Rixman, Ross, Rowland, Strom, Treadway, Wilding  
Associate Professors: Botkin, Clark, Ford, Fox, Kaatz, Malan, Mocers, Morris, Pacheco, Reid, Ross, R. P.  
Assistant Professor: Thompson

Offered by the Department  
Master of Arts degree in education  
Early Childhood Education Specialist Credential  
Multiple Subjects Credential

Early Childhood Education Specialist Credential*  
This credential authorizes the holder to serve as an Early Childhood Education Specialist in one or more of the following capacities:  
1. Teacher—lead teacher, demonstration teacher  
2. Coordinator of Early Childhood Education programs  
3. Instructor and/or coordinator of paraprofessionals  
4. Supervisor and/or director of Early Childhood Education programs  
5. Program developer  
6. Program evaluator  
7. Researcher

Attainment of this credential requires the following:  
1. A bachelor's degree (or higher)  
2. Completion of requirements for the Multiple Subjects or other valid and appropriate California teaching credential  
3. Completion of an approved 30-unit graduate program for the Specialist Credential  
4. Verification of two years of successful teaching experience at the preschool or primary grade levels

Multiple Subjects Credential (Elementary Education)  
Standards for Admission  
1. C-BEST. Students must take the California Basic Educational Skills test for admission to the Multiple Subjects Credential program. Applicants for any credential, permit, certificate, supplementary authorization, or the renewal of an emergency credential must pass this examination as required by the Commission on Teacher Credentialing.  
2. Major. The Liberal Studies Major, Options 2 and 3, may be selected in preparation for the teaching credential. Students who have academic majors other than Liberal Studies are required to pass the Commission-approved examination. Information may be obtained through the Test Office (LE-560) or through advisers in Education.

3. Prerequisite Courses. These courses are required for admission:  
Health Science 101, "Health and Lifestyle," or Health Science 320, "Health Education for Elementary Teachers"  
Mathematics 210A, "Structure and Concepts of Elementary Mathematics"  
Music 102, "Basic Musicianship for Non-Music Majors"  
Physical Education 241, "Physical Education of Children"
4. Grade Point Average. A 2.50 GPA on the last 60 units is required for admission. A 2.50 GPA must be maintained throughout the credential program.

5. Experience. Applicants must provide evidence of a minimum of 60 hours of experience with children in typical classroom settings within the last five years. Such experience consists of a description and evaluation of the experience by a supervisor. Education courses to satisfy this requirement are available.


7. Certificate of Clearance. The State of California requires that credential candidates possess a valid Certificate of Clearance before admission to the program. Forms and fingerprint cards are available.

8. Credential Advising Appointment. Each applicant must meet with a faculty adviser to plan an appropriate program.

9. Application. Applicants must complete application procedures the semester prior to beginning the credential program.

10. Student Teaching Program Selection. Application for a student teaching block assignment must be filed during the semester prior to beginning student teaching.

New Students Who Seek to Complete a Credential

Teachers with a preliminary credential who are working toward a clear credential may have a program designed to fit their background. Evaluation of college credit completed to date, and arrangements for programming should be made through the College of Education (Room 100), 265-6116.

Advanced Standing in Teacher Education

A student transferring into San Diego State University with advanced standing must complete a minimum of six units of professional education work in residence at this university in order to obtain a recommendation for a credential, regardless of the extent of education work completed elsewhere.

Evaluation of Credits

After an interval of five years, prerequisites and courses in education are reevaluated and subject to reduction in credit, in light of new requirements and changes in educational procedures. All courses taken either at this university or elsewhere must be approved by an official adviser in order to be credited toward meeting credential requirements or pattern requirements for a degree.

Multiple Subjects Teaching Credential

Multiple Subjects (Elementary) — Clear Credential

Persons interested in teaching in the elementary school will typically pursue the Multiple Subjects Credential which authorizes the holder to teach in any self-contained classroom, classrooms in which one teacher is responsible for all the subjects commonly taught in the elementary schools. Attainment of this credential requires:

1. A bachelor's degree (or higher) with any major other than education.
2. Completion of a fifth year of study (30 units of upper division or graduate units).
3. Completion of an approved program of professional education (see Department of Elementary Education for further information about the approved programs).
4. Passage of subject matter examination(s) NTE-Commons or waiver thereof through Liberal Studies major.
5. Knowledge of methods of teaching reading.
8. Course work/fieldwork and/or other to satisfy PL 94142 - "Mainstreaming."

Multiple Subjects (Elementary) — Preliminary Credential

An applicant may be granted a preliminary teaching credential if the applicant has met the requirements listed above in items 1, 3, 4 and 5. Thus, a person whose program allows him to meet these requirements would be eligible for a preliminary credential at the same time he finishes his four-year college program. During the next five years, however, such persons must complete the remaining requirements in order to become eligible for the "clear" credential.

Multiple Subjects (Elementary) — Bilingual Emphasis

Persons interested in the multiple subjects credential with a bilingual emphasis must meet the same requirements for admission as those for the regular multiple subjects credential. In addition, applicants must pass a test of fluency in oral and written Spanish and English. The Department of Elementary Education will advise students on the procedures for taking the test.

Students are advised to consult the Department of Elementary Education for information relative to bilingual emphasis courses which are available in the Liberal Studies major. A semester of student teaching in a bilingual setting is required.

Description of Interdepartmental Major for Elementary Teaching

Liberal Studies Major

With the A.B. Degree in Applied Arts and Sciences and in Liberal Arts and Sciences

Option 1. This program is available to all students but is not acceptable for the Multiple Subjects Credential. Information regarding this option is presented in the Interdisciplinary Programs section of this catalog.

Option 2 and Option 3. Liberal Studies with the A.B. Degree in Applied Arts and Sciences.

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements." A minor is not required with Options 2 or 3.

The Liberal Studies Major Options 2 and 3 meet all the requirements for the multiple subjects/diversified major as specified for the Multiple Subjects Credential. Refer to the section of the catalog on Interdisciplinary Programs for an outline of the requirements for this major.

Students planning to enter elementary education must consult and secure program approval from an adviser in the Department of Elementary Education. The following core course work is required for acceptance into the education program and may be included in the Liberal Studies Major unless otherwise noted.

Mathematics 210A, 210B

Health Science 101 or 320

Music 102

Physical Education 241 (may be taken in lieu of one of the physical education units required for graduation)

Other students who wish to take this major must consult the Dean of the Division of Undergraduate Studies to secure program approval.

General advising for Liberal Studies Option 2 is available at the University Advising Center.

LOWER DIVISION COURSE IN ELEMENTARY EDUCATION

200. Careers in Elementary Education (3) I, II

Six hours of activity, fieldwork required.

Prerequisite: Satisfactory completion of 12 hours of university course work.

Exploring elementary education as a profession, to include review of preparation requirements, patterns of classroom and school organization, and the role of the elementary educator in various instructional environments. Observation and participation in schools and school related settings.

UPPER DIVISION COURSES IN ELEMENTARY EDUCATION

(Indented for Undergraduates)
303. Advanced Student Teaching Seminar (1-2) I, II Cr/NC
Prerequisites: Satisfactory completion of Elementary Education 301, 401, and concurrent registration in Elementary Education 403.
Discussion of immediate problems in student teaching with emphasis on the influence of philosophical, social, and cultural factors on learning.

307. Seminar in Student Teaching (3) I, II
Prerequisite: Concurrent registration in Elementary Education 407.
Diagnosing and remediating elementary school children's difficulties in speech, spelling and handwriting, the individualization of instruction, professional self-evaluation; assessing learners' achievement, and counseling with learners and parents.

308. Fieldwork in Community Service in Education (2) I, II
One lecture and six hours of supervised fieldwork.
Working on a tutorial basis with children in the community who have educational needs. Maximum credit four units.

311. Child-Study Skills (2) I, II
Four hours of activity.
Prerequisites: Psychology 101 and provisional or complete admission to elementary education.
Skills in observing and interpreting the behavior of elementary school children as influenced by physical, emotional, social, and intellectual growth.

312. Community-Study Skills (2) I, II
Four hours of activity.
Prerequisite: Provisional or complete admission to elementary education.
Skills in observing and interpreting professional values and the diversity of social, cultural, economic and educational values within elementary school communities.

313. Classroom Management Skills (1) I, II
Two hours of activity.
Prerequisite: Provisional or complete admission to elementary education.
Skills in interpreting the legal aspects of education, identifying various kinds of school and classroom organization, and using instructional media and verbal stimuli to facilitate learning.

314. Field Experience in Classroom Management (1) I, II
Prerequisite: Provisional or complete admission to elementary education and concurrent enrollment in Elementary Education 313.
Field experience in assuming responsibility for managing an elementary classroom.

315. Skills in Applying Instructional Principles (2) I, II
Four hours of activity.
Prerequisite: Admission to elementary education.
Skills in using the principles of instruction related to readiness, motivation, efficiency of learning and transfer of learning to organize an effective learning environment for children.

316. Skills in Teaching Critical Thinking (2) I
Four hours of activity.
Prerequisite: Admission to elementary education.
Skills in developing instructional strategies to guide children in concept development, inquiry, exploration of creativity, and learning in the affective domain.

317. Skills in Curriculum Organization (2) I, II
Four hours of activity.
Prerequisite: Admission to elementary education.
Skills in planning, following and evaluating long-range instruction in the various school subjects.

361. Psychological Foundations of Education (1-3) I, II, S
Two hours of activity per unit.
Prerequisites: Psychology 101 and admission to elementary education.
Implementing the learning process through interactive skills, using instructional principles to facilitate learning and changes in behavior and techniques used in assessing instruction and pupil growth.

Educational Requirements:
To fulfill the requirements for the program, students must complete a total of 120 units with a minimum grade point average of 2.0. All courses must be completed with a grade of C or better. Students must also complete the General Education requirement in Written Communication, fulfilling the Writing Competency Requirement.

Advanced Writings in Education (3)
Writing to improve communication in educational and related subjects, including reports, proposals, manuals, articles and newsletters. Satisfies University upper division writing requirement for students who have completed 60 units, fulfilled the Writing Competency Requirement, and completed the General Education requirement in Written Communication.

396W. Advanced Writing Skills in Education (3)
Writing to improve communication in educational and related subjects, including reports, proposals, manuals, articles and newsletters. Satisfies University upper division writing requirement for students who have completed 60 units, fulfilled the Writing Competency Requirement, and completed the General Education requirement in Written Communication.

401. Basic Student Teaching (1-12) I, II Cr/NC
Prerequisites: Admission to elementary education and concurrent registration in Elementary Education 301.
Day-to-day teaching experiences including selected instructional activities for which a teacher in a classroom is normally responsible.

403. Advanced Student Teaching (1-12) I, II Cr/NC
Prerequisites: Satisfactory completion of Elementary Education 301, 401, and concurrent registration in Elementary Education 303.
Teaching experiences including all the instructional activities for which a teacher in a classroom is normally responsible.

405. Beginning Student Teaching (1-12) I, II Cr/NC
Prerequisite: Concurrent registration in Elementary Education 315 and 421.
Emphasis on day-to-day teaching with daily planning in the various school subjects, particularly reading.

406. Intermediate Student Teaching (3) I, II Cr/NC
Prerequisite: Credit or concurrent registration in Elementary Education 405.
Emphasis on planning and teaching in accord with the needs of children.

407. Transitional Student Teaching (6) I, II Cr/NC
Prerequisites: Elementary Education 406 and concurrent registration in Elementary Education 307.
Emphasis on making the transition from student teacher to the professional prepared to assume complete responsibility for an elementary classroom.

411. Teaching Reading in the Elementary School (1-3) I, II
Two hours of activity per unit.
Prerequisite: Admission to elementary education or possession of a teaching credential.
The nature of reading as a human behavior; the various approaches and materials used in teaching reading and coping with diversity among children as they learn to read.

412. Teaching Language Arts in the Elementary School (1-2) I, II
Two hours of activity per unit.
Prerequisite: Admission to elementary education or possession of a teaching credential.
Selecting, designing and evaluating appropriate learning experiences in handwriting, spelling, oral and written composition, grammar and usage, and listening to assure children's growth in language skills.

413. Teaching Mathematics in the Elementary School (1-2) I, II
Two hours of activity per unit.
Prerequisite: Admission to elementary education or possession of a teaching credential.
Prerequisites for instruction, including using and developing materials in elementary mathematics and program development to meet children's needs in understanding the structure of mathematics.

414. Teaching Social Studies in the Elementary School (2) I, II
Four hours of activity.
Prerequisite: Admission to elementary education or possession of a teaching credential.
Developing curriculum, principles and materials of instruction, including instructional media and participation in elementary social studies education.

415. Teaching Science in the Elementary School (2) I, II
Four hours of activity.
Prerequisite: Admission to elementary education or possession of a teaching credential.
Developing curriculum, principles and materials of instruction, including instructional media and participation in elementary science education.
416. Teaching Art in the Elementary School (1-2) I, II
Two hours of activity per unit.
Prerequisite: Admission to elementary education or possession of a teaching credential.
Developing curriculum, principles, and materials of instruction, including instructional media and participation in elementary art education.

417. Teaching Music in the Elementary School (1-2) I, II
Two hours of activity per unit.
Prerequisite: Admission to elementary education or possession of a teaching credential.
Developing curriculum, principles and materials of instruction, including instructional media and participation in elementary music education.

418. Teaching Science and Social Studies in the Elementary School (1-3) I, II
Two hours of activity per unit.
Prerequisite: Admission to elementary education or possession of a teaching credential.
Developing and using instructional programs to facilitate growth in critical thinking and using informational resources to learn and apply concepts and generalizations from the various sciences and social sciences.

421. Skills in Teaching Reading (2) I, II
Four hours of activity.
Prerequisite: Admission to elementary education or possession of a teaching credential.
Skills in teaching beginning reading, word analysis, comprehension, literary interpretation and independent investigation.

431. Skills in Teaching Remedial Reading (1) I, II
Two hours of activity.
Prerequisites: Admission to elementary education and Elementary Education 421.
Skills in diagnosing and remediating children's reading difficulties.

432. Techniques for Substitutes (3) I, II
One lecture and four hours of activity.
Prerequisite: Admission to a credential program or a teaching credential.
Preparation for persons entering the field of substituting. Skills in adapting to the temporary status of substitute teaching, compilation of substitute teaching materials, and workshops to create materials.

436. Adapting Arts and Crafts to Individual Needs (3) I, II
One and one-half hours of lecture and three hours of activity.
Prerequisite: Admission to elementary education or possession of a teaching credential.
Adapting arts and crafts instruction for individuals with physical, sensory, cognitive needs. Emphasis on visual arts for enhancement of growth and development. Discussion, demonstration, practice of broad range of techniques, materials, strategies.

496. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

499. Special Study (1-3) I, II
Prerequisite: Consent of instructor. Open only to senior and graduate students in education who have shown ability to work independently. Individual study. Maximum credit six units.

UPPER DIVISION COURSES IN ELEMENTARY EDUCATION
(Also Acceptable for Advanced Degrees)

502. Field Experience in Early Childhood Education (1-6) I, II
Prerequisite: Elementary student teaching or approved full-time teaching experience.
Supervised field experience in preschool or primary grades. Assignments made on an individual basis to fit the candidate's background, experience and career goals. Maximum credit six units.

512. Children's Literature in Elementary Education (3) I, II
A survey of children's literature; the selection and use of material in the elementary classroom.

514. Social Studies Unit Construction in Elementary Education (3)
Prerequisite: Elementary Education 414.
Selecting and organizing content, analyzing materials, and developing instructional units in elementary social studies for classroom use.

522. Storytelling (3)
Prerequisites: Basic language arts course, children's literature. Art of storytelling, including planning of the story hour, locating suitable materials, techniques for learning and presenting various story types. Selection of literature appropriate for oral presentation to different groups and age levels. Not open to students with credit in Education 596 or Elementary Education 596. Storytelling.

523. Classroom Diagnosis and Remediation of Underachievers in Mathematics (3)
The assessment and remediation of underachievers in mathematics. Techniques in determining difficulties in mathematics and prescribing remedial work; for use by elementary and secondary classroom teachers and mathematics education specialists.

526. Arts and Crafts for Teachers: A Multicultural Approach (3)
One lecture and four hours of activity.
Prerequisite: Twelve units in education. Art histories and craft traditions from world cultures. Creation of instructional materials from different cultural sources. Not open to students with credit in Education 596 or Elementary Education 596, Multicultural Arts and Crafts.

532. Discipline and Classroom Management (3) I, II
Prerequisite: Six upper division units in education, psychology or sociology.
Analysis of research and theories of classroom discipline, management, and teaching effectiveness, with practical application to the elementary classroom setting.

550. Teaching the Special Child in the Regular Classroom (2)
Prerequisite: Teaching credential or admission to elementary education.
Knowledge, skills, and instructional programs for teaching handicapped students in the regular classroom. Meets the mainstreaming requirements for the California Multiple Subjects Credential (clear). Not open to students with credit in Special Education 550, Teaching the Special Child in the Regular Classroom. Fieldwork required.

562. Measurement and Evaluation in Elementary Education (3) Irregular
The use of intelligence and achievement tests in the diagnosis and improvement of learning; construction of objective examinations, problems of evaluation in education; the elements of statistical techniques.

571. Seminar in Child Development (3)
Prerequisite: One course in child development.
Patterns in human development, especially in children ages eight and younger. Interpreting child development to differentiated staff, paraprofessionals, parents and community members. Planning for continuous progress. Reporting progress to parents.

596. Topics in Elementary Education (1-6) I, II, S
To meet the needs of individuals or groups of teachers who desire to study selected problems in elementary education. The observation of classroom teaching will be provided for members in attendance. Interested persons should contact the Coordinator of Elementary Education. May be repeated with new content for more than six units. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units applicable to a master's degree.

GRADUATE COURSES IN ELEMENTARY EDUCATION
Refer to the Graduate Bulletin.
Multicultural Education

Faculty
Chair: Rodriguez
Professors: Cornejo, Ochoa
Associate Professors: Espinosa, Kuhlman, Rodriguez

Offered by the Department
Master of Arts degree in education.
Bilingual/Cross-Cultural Specialist Credential.
Certificate for Language Development Specialist.

Certificate for Language Development Specialist
The Language Development Specialist Certificate provides an interdisciplinary approach in linguistics and multicultural education to train teachers in theory and application of English as a second language methodologies for linguistically diverse students in grades K-12.

Prerequisites for admission:
1. Valid California teaching credential.
2. Six units of an appropriate foreign language.

The certificate program includes Linguistics 520, 550, 551, 552, and Multicultural Education 553, 602*, 650*, 651.

A grade point average of 3.0 must be obtained in the eight courses. Students who complete the certificate program are not eligible to receive the Basic Certificate in Applied Linguistics and English as a Second Language (ESL).

* Prerequisites waived for students in this program.

UPPER DIVISION COURSE IN MULTICULTURAL EDUCATION
(Intended for Undergraduates)

499. Special Study (1-3) I, II
Prerequisite: Consent of instructor. Open only to senior and graduate students in education who have shown ability to work independently.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES IN MULTICULTURAL EDUCATION
(Also Acceptable for Advanced Degrees)

551. Introduction to Multicultural Education (3)
Overview of cultural pluralism in education, industry, business, other institutions and society at large.

552. Teaching Writing in Multilingual Settings (3)
Methodologies in teaching primarily expository writing to students from various language backgrounds, focusing on skills such as those needed to avoid syntactic, semantic and stylistic language interference.

553. Oral Language Assessment Techniques (3)
Theoretical and applied linguistics; language functions in the bilingual classroom; implications of sociolinguistics for diagnosis and classification of bilingual children; analysis and application of language assessment instruments; comparison of diverse linguistic systems associated with different cultures. (Formerly numbered Education 553.)

554. Cultural Foundations of Education (3)
How cultural foundations affect learning patterns and students' responses in instructional settings; domestic life, kinship, legal, sociocultural systems and other factors affecting socialization patterns and therefore learning styles.

GRADUATE COURSES IN MULTICULTURAL EDUCATION
Refer to the Graduate Bulletin.

Secondary Education

Faculty
Emeritus: Altamura, Bradley, Crum, Fishburn, Friedrich, Fullkerson, Gjerde, Hunter, Kinder, Meek, Person, Platz, Prody, Schrupp, Smith, H., Strand, White, Yarborough
Chair: McLevie
Professors: Ackery, Anthony, Becklund, Bee, Briggs, Curry, Duckworth, Erickson, Flood, Gray, Halvaker, Lapp, McCabe, McCray, McLevie, Pehrson, Riggs, Shaw, Smith, R., Stautland, Steckbauer, Yesselman
Associate Professors: Behm, Lujan, Park
Assistant Professors: Belker, Santa Cruz

Offered by the Department
Master of Arts degree in education.
Bachelor of Vocational Education degree.
Single Subject Teaching Credential.
Community College Instructor Credential.
Reading Specialist Credential.

Single Subject Credential (Secondary Education)

Standards for Admission

C-BEST Examination
After February 1, 1983, anyone applying to the Commission on Teacher Credentialing for the initial issuance of any credential, permit or certificate, supplementary authorization, or the renewal of an emergency credential is required to have taken and passed the California Basic Educational Skills Test.

Admission to Department of Secondary Education
Admission to the Department of Secondary Education is accomplished in three stages:

1. Prerequisite Course (Secondary Education 400: "The Secondary School.")
   This is an introductory course which serves as an orientation to careers in secondary education. During this course students will participate in fieldwork assignments, will learn and demonstrate initial teacher professional competencies, and will complete admission requirements for the Single Subject Credential program. This class is open to all students and may be taken at any time within the individual's undergraduate or graduate preparation as long as it is taken and completed prior to enrollment in the first block of professional courses.

   Accelerated Program: Applicants with regular classroom experience of one year or more and minimum 3.50 grade point averages will be considered by the Admissions Committee for accelerated or experimental programs which allow SECED 400 or a substitute course to be waived.

   Applications must be submitted by October 31 for Spring Semester and March 31 for Fall Semester.

2. Admission to Student Teaching I (Secondary Education 401, 402, 405, and preferably 403—except majors in Art, Music and PE.—and Ed. Tech. 404).
   These courses in Stage I comprise the first block of professional education courses and include an initial student teaching experience. Student must provide own transportation. Formal application for admission to these courses will be made at meetings held in the SECED 400 classes, but in any case, the following must be on file in ED-100H office at least one month before the end of the semester preceding enrollment in Student Teaching I. Check deadline dates in ED-100H.
   a. Completed application.
   b. Transcripts of all college work verifying an acceptable grade point average of 2.75 overall and 3.00 in the upper division major. Unofficial student copies of transcripts are acceptable. Those whose GPAs do not meet these requirements are encouraged to submit a petition to the Admissions Committee.
c. Favorable recommendations from the adviser in the major department or verification from another California teacher training institution that the approved teaching major has been satisfactorily completed at that institution.

d. Evidence of a negative result on a tuberculosis test (these tests are valid for four years and must be in effect during the time that the credential candidate is enrolled in the professional education sequence).

e. Evidence of having taken C-BEST.

f. Student teaching preference cards and request forms.

g. Certificate of Clearance. The State of California requires that persons admitted to credential programs possess a valid Certificate of Clearance. Forms are available in the Secondary Education Department Office.

Priority for admission is based upon the date of clearance for these requirements.

3. Admission to Student Teaching II (Secondary Education 406-407).

These courses include a full-time daytime student teaching experience. Application must be made at least one month before the end of the semester prior to anticipated enrollment. Normally, this is done while the student is enrolled in SECED 401, 402, 406.

Admission is based upon:

a. Satisfactory completion of SECED 401, 402, 405, plus Educational Technology and Librarianship 404, and preferably SECED 403 (except for Music, Art and PE majors).

b. Application for enrollment in SECED 406 through submission of completed student teaching forms to the Student Teaching Office in ED-100H. Enrollment in SECED 407, Seminar, must be concurrent with enrollment in SECED 406, Student Teaching.

c. Student must successfully complete course work to clear U.S. Constitution requirement or successfully pass U.S. Constitution examination.

d. Student must successfully complete Health Science 321 (2 units).

NOTE 1: DELAYED START OF STUDENT TEACHING will require filing of a request for Leave of Absence with the Secondary Office (Room ED-100H, 265-6118.)

NOTE 2: As of July 1, 1979, information on the mainstreaming of students is a state requirement for the clear credential. This requirement can be met during the regular course sequence.

New Students Who Seek to Complete a Credential

Teachers with preliminary credentials who are working toward full certification may have programs designed to fit their background. Evaluation of college credit completed to date, and arrangements for programming should be made through the Credential Office of the College of Education, Room CL-100, 265-5964.

Advanced Standing in Teacher Education

A student transferring into San Diego State University with advanced standing must complete a minimum of six units of professional education work in residence at this university in order to obtain a recommendation for a credential, regardless of the extent of education work completed elsewhere.

Evaluation of Credits

After an interval of five years, courses in education are reevaluated and subject to reduction in credit, in light of new requirements and changes in educational procedures. All courses taken either at this university or elsewhere must be approved by an official adviser in order to be credited toward meeting credential requirements or pattern requirements for a degree.

Single Subject Teaching Credential

Single Subject (Secondary) — Preliminary

Persons interested in teaching in the secondary school will pursue the single subject credential which authorizes the holder to teach K-12 in only the following subjects.

<table>
<thead>
<tr>
<th>Credential Area</th>
<th>Major</th>
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<tbody>
<tr>
<td>Single Subject</td>
<td>Art</td>
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<tr>
<td>Art</td>
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<tr>
<td>Business</td>
<td>Accounting</td>
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<td>Finance</td>
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<td>Information Systems</td>
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<td>Management</td>
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<td>Marketing</td>
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<td>English</td>
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<td>Comparative Literature</td>
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<td>Drama</td>
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<td>English</td>
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<td>Journalism</td>
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<td>Linguistics</td>
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<td>Speech Communication</td>
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<td>Foreign Languages</td>
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<td>Classics</td>
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<tr>
<td>Health Science</td>
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<tr>
<td>History</td>
<td></td>
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<tr>
<td>Home Economics</td>
<td></td>
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</tbody>
</table>

NOTE: Undergraduate students in their final semester prior to obtaining a baccalaureate degree may sign up for concurrent postbaccalaureate credit as explained in the section of this catalog on "Graduation Requirements."
Single Subject (Secondary) — Clear

An applicant may be granted a CLEAR teaching credential if all of the requirements listed above have been met and the student has completed a fifth year of study (30 units of upper division or graduate level courses after completion of the baccalaureate degree).

NOTE: Undergraduate students in their final semester prior to obtaining a baccalaureate degree may sign up for concurrent post-baccalaureate credit as explained in the section of this catalog on "General Regulations."

The Community College Instructor Credential

Specific Requirements

1. An associate degree in which the student can establish four years of occupational experience in a subject matter area plus 12 units in designated courses on the community college.
2. A baccalaureate degree in which the student can establish two years of occupational experience and a major or minor in a subject matter area related to this occupational experience plus six units in designated courses on the community college.
3. A master’s degree in a subject matter area designated in Title 5, Section 52210 (subjects commonly taught at a community college).

Baccalaureate Degree Candidates

The following courses meet the requirements of Title 5, Section 5225 (Community College Instructor Credential): Education 360, 381, 382, and 565. Students may also enroll if they presently hold a partial California credential in an occupational area. Early consultation with the Higher Education Programs Coordinator is recommended.

Master’s Degree Candidates

No formal courses in education are required under the current interpretation of the Education Code. The program is elective and selective. It is strongly suggested, however, that graduate students enroll in the professional courses in teacher education in order to enhance employability possibilities as most community colleges require some professional preparation and/or experience. Students desiring further information are urged to consult the Higher Education Programs Coordinator. Admission to Education 700 is based upon successful completion of Education 660 (not required for psychology majors) and Education 680 and selection by the Community College Admission Committee.

Most departments on the San Diego State University campus have developed programs permitting graduate students to obtain the master’s degree and enroll in the education courses concurrently in as little as one year of full-time study. The courses in education are offered in late afternoon and evenings in regular semesters. The following courses are suggested to enhance employment in the community college:

ED 630 Sem. in Instructional Methods & Materials: Community College 3
ED 660 Advanced Educational Psychology 3
ED 680 The Community College 3
ED 700 Directed Teaching: Community College Cr/NC 3

NOTE: Directed teaching can be accomplished only in a community college day assignment and not in summer session.

Reading Specialist Credential

San Diego State University offers a program leading to a Reading Specialist Credential. This credential authorizes the holder to function as a reading specialist in grades K through 12. For information concerning this credential, the student is referred to the Reading Center, Room NE-88.

Requirements for Admission

1. A valid California basic teaching credential applicable within the range of grades kindergarten to 12.
2. Admission and planning interviews with a program adviser.
3. An approved basic course in methods and materials for teaching reading.

Program

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td>ED 511 Reading Diagnosis</td>
<td>3</td>
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<tr>
<td>ED 621 Advanced Diagnosis in Reading</td>
<td>3</td>
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<tr>
<td>to be taken concurrently with ED 652B. Interpersonal/Interdisciplinary Communication Skills</td>
<td>1</td>
</tr>
<tr>
<td>ED 631 Reading Clinic (Must be taken concurrently with ED 652A)</td>
<td>3</td>
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<tr>
<td>ED 690 Procedures of Investigation and Report</td>
<td>3</td>
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<tr>
<td>ELED 611 Seminar in Reading in Elementary Education, or</td>
<td>3</td>
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<tr>
<td>SECED 681 Seminar in Secondary School Reading</td>
<td>3</td>
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<tr>
<td>ED 652 Topics in Reading Education. Three required categories:</td>
<td>2</td>
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<tr>
<td>652A. Linguistic/Cultural Difference and Reading</td>
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</tr>
<tr>
<td>652B. Interpersonal/Interdisciplinary Communication Skills</td>
<td></td>
</tr>
<tr>
<td>652C. Children/Young Adult Literature, Oral and Creative Responses to Reading</td>
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<tr>
<td>ED 701 Field Experience as the Reading Specialist Electives</td>
<td>4</td>
</tr>
</tbody>
</table>

Additional Requirements

1. A minimum of one year of full-time teaching experience (or the equivalent) within the range of grades kindergarten to 12.
2. Satisfactory completion of a comprehensive examination covering the program course work.
3. Satisfactory completion of the Graduate Record Examination.

Bachelor of Vocational Education Degree

Instructors of Occupational Education are encouraged to complete the B.V.E. and to enroll in the program leading to the Master of Arts in Education with a concentration in community college curriculum and instruction. For further information, students are advised to consult with the Higher Education Coordinator, College of Education.

The Bachelor of Vocational Education degree is designed primarily for instructors who are teaching in a vocational education program either in the secondary school or in the community college and qualify for an official evaluation (under provisions of the Swain Bill) through the State Board of Vocational Examiners in Sacramento. To qualify for the evaluation, the requirements of the State Education Code, Section 89223, must be met. This section stipulates a minimum period of vocational teaching experience amounting to 1,620 clock hours in a full-time position or 1,000 clock hours in an approved part-time extension class.

The individual desiring to secure the B.V.E. degree should follow the basic pattern set down in the following steps:

1. The individual must have an Associate of Arts degree or 60 units (This should include, if possible, the 40 lower division units of general education required for the bachelor’s degree from SDSU. The additional nine upper division units required for general education must be completed at SDSU.) (70 units maximum)
2. The individual must apply for evaluation of work experience (Swan Bill). Applicants should apply to the Board of Examiners for Vocational Teachers, Bureau of Industrial Education, State Education Bldg., 721 Capitol Avenue, Sacramento, California. These units count toward the major and are classified as upper division units. (See Higher Education Programs Coordinator for assistance and application forms.)

3. The individual must take the professional occupational teacher education courses required for the Community College Credential (Title 5). To receive credit toward the B.V.E. degree, these courses must be taken from an institution that will grant credit for the courses toward a bachelor's degree — ED 380, 381, 382, and 565. 6-12 units

4. The individual must receive credit for the required number of upper division courses to complete the Bachelor of Vocational Education degree graduation requirements. This includes those given in item 2 above. 40 units

5. The individual must satisfy all other graduation requirements, including competencies, upper division writing requirement, grade point average, etc.

6. The individual must see an adviser in the area of his major to arrange his program for completion of course work. A series of elective courses that will support the professional responsibilities of the candidate will be recommended. Furthermore, 30 units must be in residency at SDSU, of which 24 must be upper division. Total: 124 units

UPPER DIVISION COURSES IN SECONDARY EDUCATION
(Intended for Undergraduates)

400. The Secondary School (3) I, II
To screen, advise, and initiate admission requirements. Includes fieldwork assignment, demonstration of oral and writing competencies, and initial teacher professional competencies.

401. Humanistic and Social Aspects of Teaching (4) I, II
Prerequisites: Secondary Education 400 and admission to secondary education. To be taken concurrently with Secondary Education 402 and 405.
Teacher competencies as they relate to values, awareness, self-concept, rights and responsibilities.

402. Behavioral and Psychological Aspects of Teaching (4) I, II
Prerequisites: Secondary Education 400 and admission to secondary education. To be taken concurrently with Secondary Education 401 and 405.
Teacher competencies as they relate to learning theories, adolescent growth, self-assessment, measurement and evaluation.

403. Teaching of Reading in the Secondary School (3) I, II
Teacher competencies as they relate to the teaching of reading in content areas, including techniques and materials, reading programs, classroom diagnosis, developmental and corrective reading methods.

405. Student Teaching I (1-6) I, II Cr/NC/SP
Prerequisites: Secondary Education 400 and admission to secondary education. To be taken concurrently with Secondary Education 401 and 402. Secondary Education 403 is highly recommended to be taken at this time (not required for majors in art, music and physical education). Student must provide own transportation to student teaching site.
On-site, part-time experience to implement teacher competencies developed in Secondary Education 401 and 402. Maximum credit six units.

406. Student Teaching II (1-12) I, II Cr/NC/SP
Prerequisites: Secondary Education 400, 401, 402, 403 (except majors in art, music and physical education), 406, and Educational Technology and Librarianship 404. To be taken concurrently with Secondary Education 407. Student must provide own transportation to student teaching site.
On-site, full-day experience to implement teacher competencies as developed from the total professional sequence. Maximum credit twelve units.

GRADUATE COURSES IN SECONDARY EDUCATION
Refer to the Graduate Bulletin.
Special Education

Faculty
Emeritus: Singer, Trimmer
Chair: Cegelka
Professors: Cegelka, Doorlag, Fearn, Forburg, Lynch, McClard
Associate Professors: Archer, Brady, Lewis
Assistant Professor: Pumian
Lecturer: Kanovsky

Offered by the Department
Master of Arts degree in education.
Special Education Specialist Credentials.
Resource Specialist Certificate.
Certificate in Bilingual (Spanish) Special Education.
Certificate in Teaching the Emotionally Disturbed/Behaviorally Disordered.

Special Education Specialist Credentials
San Diego State University offers programs leading to the following Special Education Specialist Credentials: Learning Handicapped, Severely Handicapped, Visually Handicapped, Physically Handicapped, and Gifted. These credentials authorize the holders to teach in the special education setting designated. There are many common requirements between the Specialist Credential programs and the Master of Arts degree; completion of the former may bring the student to within twelve units of the course work requirements for the M.A. degree.

Requirements for Admission
1. Admission to the appropriate program within the Department of Special Education.
   a. Complete application to department as well as to the University.
   b. Complete GRE General (Aptitude) Test (a minimum verbal and quantitative score of 950 is required).
   c. A minimum GPA of 2.5 for the last 60 units attempted.
   d. Admissions interview with faculty.
2. A basic California Teaching Credential.
3. Completion of prerequisite course work: Special Education 471, 500, 501, and specific specialty program prerequisites. One course in Human Growth and Development, approved by an adviser, for Severely Handicapped (9-12 units).

Program
1. Core Courses
   Special Education 600 (3 units)** or Education 690 (3 units)***
2. Specialization Courses
   a. Learning Handicapped – Special Education 480A (4 units), 505A, 510A, 512A, 513A, 514A, 514B, and six units of electives (23 units.)
   b. Severely Handicapped – Special Education 480B (8 units), 505B, 505C, 510B, 511B, 512B, 513B, and two units of electives (28 units.)
   c. Physically Handicapped – Special Education 480C (8 units), 505C, 507, 510A, 512C, 513A or 513B, 514A, 514B, and one unit of electives (28 units.)
   d. Gifted – Special Education 480D (2 units), 505G, 511D, 622, and nine units of electives (20 units.)
   e. Visually Handicapped – Special Education 480E (8 units), 510D, 511E, 512D, 513A or 513B, 520, 521, 523 (29 units.)

* No new students are being admitted to the Visually Handicapped Credential program.
** For students completing the Bilingual (Spanish) Certificate program, Multicultural Education 602 (3 units) may be substituted, with approval of graduate adviser, for Special Education 600.
*** In a departmentally approved section of this course.

Resource Specialist Certificate
The Department of Special Education offers course work leading to the California Resource Specialist Certificate. This certificate authorizes the holder to function as a Resource Specialist in special education settings. To be recommended for this certificate by San Diego State University, the candidate must hold a valid Special Education Specialist Credential, have completed three years of teaching in regular and special education settings, and have satisfied the competencies specified in the three Resource Specialist courses. These courses include the following: Special Education 651, 652, 653.

Certificate in Bilingual (Spanish) Special Education
This certificate program provides specialized preparation for teachers of learning handicapped children whose primary language is Spanish. Prerequisites for admission include the following:
1. Completion of, or admission to, the departmental program for the Specialist Credential in Special Education (Learning Handicapped). Will satisfy prerequisites for Special Education 510C and 511C.
2. Special Education 505F.
3. Spanish language proficiency at the S-3 (FSL 3) level.
4. Knowledge of the target culture and bilingual teaching strategies. Will satisfy prerequisites for Multicultural Education 602. Proficiency may be demonstrated by passing the "Test of Culture and Teaching" used by the College of Education bilingual emphasis programs or Multicultural Education 603.

Certificate program requirements include the following: Multicultural Education 553, 602, Special Education 510C, 511C, and demonstration of competence in teaching learning handicapped students whose primary language is Spanish. A grade point average of 3.0 must be obtained in the four courses. Contact the Department of Special Education for further information.

Certificate in Teaching the Emotionally Disturbed/Behaviorally Disordered
This certificate program provides specialized preparation for teachers of children with severe emotional disturbance who have been labeled as severely emotionally disturbed/behaviorally disturbed in the school setting, including those children labeled as seriously emotionally disturbed.

Prerequisites to admission to the certificate program include the following:
1. Completion of, or admission to, the departmental program for the Specialist Credential in Special Education (Severely Handicapped).
2. A graduate GPA of 3.0.
3. Special Education 600 (adviser appointed sections).
4. Interview with program faculty.

Program requirements for the Certificate in Teaching the Emotionally Disturbed/Behaviorally Disordered include the following: Special Education 510A, 512E, 514A, 514B, 771, 871 (2 units, adviser approved section) and a grade point average of 3.0 is required for certificate course work. Contact the Department of Special Education for further information.
UPPER DIVISION COURSES IN SPECIAL EDUCATION
(Intended for Undergraduates)

471. Fieldwork In Special Education (3) I, II Cr/NC
One lecture and four hours of field work.
Prerequisite: Credit or concurrent registration in Special Education 500.
Supervised observation and participation in classroom and related school activities for
exceptional students. Course work includes discussion, analysis and reports of observation.

480. Directed Internship: Special Education (1-4) I, II Cr/NC
Application to take course should be made during the preceding semester.
Maximum credit eight units upon approval of adviser.
Extensive daily teaching in public schools of exceptional individuals in one of five areas:
A. Learning Handicapped
B. Severely Handicapped
C. Physically Handicapped
D. Gifted
E. Visually Handicapped

499. Special Study (1-3) I, II
Prerequisite: Consent of instructor. Open only to senior and graduate students in education
who have shown ability to work independently.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES IN SPECIAL EDUCATION
(Also Acceptable for Advanced Degrees)

500. Exceptional Individuals (3) I, II, S
Three lectures/fieldwork.
Principles, procedures and techniques in identifying and programming for exceptional
students. Historical, philosophical and legal background which affect current special education
practices.

501. Special Education Procedures and Interpersonal Processes (3) I, II, S
Prerequisite: Credit or concurrent registration in Special Education 500.
Introduction to procedures, legal requirements, and interpersonal processes in the identifi-
cation, prescription, teaching and evaluation of instructional programs for handicapped
students.

505. Characteristics and Education of Exceptional Individuals (3)
Prerequisite: Credit or concurrent registration in Special Education 471, 500, 501;
and Family Studies and Consumer Sciences 570 for 505H.
Review of research, educational programs, curriculum approaches and characteristics of
individuals in the area of exceptionality. Historical, philosophical, developmental, sociological,
psychological, behavioral and environmental perspectives of the exceptionality.
May be taken in each of the areas of exceptionality:
A. Learning Handicapped
B. Severely Handicapped
C. Physically Handicapped
D. Visually Handicapped
E. Emotionally Disturbed

506. Law and Special Education (2)
Prerequisites: Special Education 471, 500, 501.
Laws, litigation, and the legislative process affecting special education of handicapped
students. Knowledge of legal rights and due process for students and teachers. Current
issues and trends in special education law.

507. Adaptive Equipment for the Severely Physically Handicapped (3)
Prerequisite: Credit or concurrent registration in Special Education 505C.
Use and simple maintenance of wheelchairs, prone-standers, positioning equipment and
other devices used in classrooms for the severely physically handicapped. Purchase, design,
construction and modification of school equipment for use by the physically handicapped.
Study of legal requirements and liability.

* To be offered for the last time in 1984-85.

510. Assessment and Evaluation of Exceptional Individuals (3) I, II
Prerequisites: Special Education 501 and 505 in area of specialization. For 510D, Special
Education 471, 500, 501; concurrent registration in Special Education 480.
Tests and procedures for assessing, evaluating and monitoring progress of exceptional
individuals to meet their physical, intellectual, social, and emotional needs. Problems in the
psychological diagnosis and appraisal. Utilization of assessment procedures for the
educational and rehabilitation program.
May be taken in each of the areas of specialization:
A. Learning Handicapped
B. Severely Handicapped
C. Multicultural Learning Handicapped
D. Visually Handicapped

511. Curriculum and Instruction for Exceptional Individuals (3) I, II
Prerequisites: Special Education 501, 505 in area of specialization, 510 in area of specializa-
tion. For 511E, Special Education 471, 500, 501; concurrent registration in Special Education
480.
Utilization of data for determining general and specific objectives to meet the needs unique
to exceptional individuals. Developing and selecting materials and procedures for the achieve-
ment of these objectives. Establishing procedures for monitoring and evaluating pupil
progress.
May be taken in each of the areas of specialization:
A. Learning Handicapped
B. Severely Handicapped
C. Multicultural Learning Handicapped
D. Visually Handicapped

512. Personal Adjustment of the Exceptional Individual (3) I, II
Prerequisites: Special Education 501 and 505 in area of specialization. For 512D, Special
Education 471, 500, 501.
Overlook of intellectual, emotional and physical problems which influence the success or
failure patterns of individuals with exceptional needs. Strategies used to facilitate the adjust-
ment of the exceptional individual to his environment including home, school and work.
May be taken in each of the areas of specialization:
A. Learning Handicapped
B. Severely Handicapped
C. Emotionally Disturbed

513. Dynamics of Behavior Change and the Exceptional Individual (3) I, II
Prerequisite: Special Education 501.
Management and treatment of individuals with exceptional needs. Current theories and
programs in behavioral change studies analyzed with reference to their applications for the
educational environment.
May be taken in each of the areas of specialization:
A. Learning Handicapped
B. Severely Handicapped
C. Visually Handicapped

514. Curriculum and Instruction Learning Handicapped (2)
Prerequisites: Special Education 505A, 510A.
Utilization of data for determining general and specific objectives to meet the needs of
learning handicapped students. Developing and selecting materials and procedures for the
achievement of these objectives. Establishing procedures for monitoring and evaluating pupil
progress.
Must be taken in each of these areas:
A. Elementary Learning Handicapped
B. Secondary Learning Handicapped

515. Assessment and Programming for Handicapped Infants and Preschoolers (4) I
Prerequisites: Special Education 501, 505H, and Family Studies and Consumer Sciences
570.
Tests, techniques, and procedures for assessing handicapped infants and preschoolers.
Developing, implementing, monitoring, and evaluating educational programs in home-based
and center-based programs. Communicating assessment and program objectives and data to
parents and other professionals.

* To be offered for the last time in 1984-85.
520. Educational Implications of Visual Disability (3) *
Prerequisites: Special Education 471, 500, 501; concurrent registration in Special Education 480; consent of instructor and admission to visually handicapped program.
Causes, symptoms, treatment of visual impairment; eye health and vision screening. Classroom assessment of functional vision. Interpretation of vision assessment, the use of low vision aids.

521. Braille Reading and Writing (3) *
Prerequisites: Special Education 471, 500, 501; concurrent registration in Special Education 480 and consent of instructor.
Development of decoding and encoding skills in reading and writing for visually handicapped individuals by means of the Braille system. Course includes literary, mathematics and music Braille codes and teaching techniques.

522. Orientation and Mobility (3) *
Prerequisites: Special Education 471, 500, 501; concurrent registration in Special Education 480 and consent of instructor.
The aural, tactual, visual, and kinesthetic senses in mobility skills for the visually handicapped. Acquisition of basic orientation and mobility skills in simulation.

523. Multihandicapped/Blind and Early Intervention (3) *
Prerequisites: Special Education 471, 500, 501; concurrent registration in Special Education 480, consent of instructor.
Curricula, teaching methods, and assessment procedures for the multihandicapped populations. Materials for low-functioning visually handicapped students of all ages. Early intervention, counseling, activities for stimulation.

596. Selected Topics in Special Education (1-4) I, II
Specialized study of selected topics in special education. May be offered as either a workshop or lecture/discussion. See Class Schedule for specific content. Maximum credit six units applicable on a master's degree.

* To be offered for the last time in 1984-85.

GRADUATE COURSES IN SPECIAL EDUCATION
Refer to the Graduate Bulletin.

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College of Engineering

The undergraduate degrees in aerospace, civil, electrical, and mechanical engineering, are accredited by the Accreditation Board for Engineering and Technology, Inc.

Faculty
Dean: Craig
Associate Dean: Hussain
Assistant Dean: Stratton

Offered by the College of Engineering
Master of Science degree in aerospace, civil, electrical and mechanical engineering.
Major in aerospace engineering with the B.S. degree.
Major in civil engineering with the B.S. degree.
Major in electrical engineering with the B.S. degree.
Major in mechanical engineering with the B.S. degree.
Minor in engineering.

* No students will be admitted into this program during the current academic year.

Undergraduate Program

The objective of the engineering program at San Diego State University is to provide the intellectual and physical environment that will encourage students to develop their capacities toward a successful career in the profession of engineering. The graduates of this program are able to assume personal responsibility for the development and application of engineering knowledge. They are qualified to take the Engineer-in-Training examination; this is the first step to professional registration, to enter industry at the junior engineer level, or to continue their formal education at the graduate level. Because the engineer's work is predominantly intellectual and varied, and not of a routine mental or physical character, the program places emphasis on the mastery of a strong core of subject matter in the physical sciences, mathematics, and the engineering sciences of broad applicability. Woven throughout the pattern is a continuing study of the social/humanistic facets of our civilization, because the engineering graduates must expect to find their best expression as leaders, conscious of the social and economic implications of their decisions.

Although the profession of engineering presents a variety of specialties, undergraduate students initially focus their attention on a pattern of course work emphasizing engineering fundamentals. Students then are able to utilize this knowledge of fundamentals in developing special knowledge in their area of specific interest.

The College of Engineering subscribes to the intent of the statements approved by the Engineering Liaison Committee of the State of California. Students transferring from California community colleges will be given junior level standing if they have successfully completed lower division course work in mathematics, chemistry, physics and engineering appropriate to their engineering major, presuming, upon transfer, that they have completed at least 50 percent of the graduation unit requirements in their major.

Transfer Credit

No credit will be given for upper division engineering course work taken at an institution having an engineering program which has not been accredited by the Accreditation Board for Engineering and Technology, Inc., unless the student successfully completes the first 12 units of engineering work attempted at this university. At that time, and upon recommendation of the student's major department, credit will be given for the unaccredited work.

Graduation Requirements

1. A minimum of 133 semester units.
2. A minimum of 30 units in residence. Twenty-four of these shall be earned in upper division courses and shall include at least one-half of the major.
3. A scholastic grade point average of 2.0 (grade of C on a five-point scale) or better in (a) all units attempted, (b) all units in the major, and (c) all units attempted at this university.

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4. At least 36 upper division units. (However, a typical program usually consists of at least 53 upper division units.)
5. Any student who does not wish to pursue the Bachelor of Science degree in aerospace, civil, electrical, or mechanical engineering must plan a course of study which must be approved by the Dean of the College of Engineering.
6. Satisfactory completion of competency tests in mathematics and writing, or completion of appropriate courses designated in lieu thereof.
7. Satisfaction of the upper division writing requirement.
8. All regulations established by the university.
9. American Institutions, to include competence in American history, institutions and ideals, U.S. Constitution, and California state and local government.
10. General Education requirements (see below).
11. Application for graduation.

GENERAL EDUCATION

Students will complete a minimum of 50 units in General Education, to include a minimum of nine upper division units taken after attaining junior class standing. At least six of the nine upper division units must be taken from Explorations; the remaining three units may be taken from Explorations or from specifically approved upper division course substitutions for Foundations areas B and C (Social and Behavioral Sciences and Humanities). See the College of Engineering for a list of those approved courses. No more than twelve units may be used for General Education credit from any one department or academic unit.

I. Communication and Analytical Reasoning: 15 units
   A. Written Communication (6 units to include):
      1. Composition (3 units)
      2. Intermediate Composition (3 units)
   B. Oral Communication (3 units)
   C. Mathematics (6 units)
      Mathematics 150
      Mathematics 151

II. Foundations: 29 units
   A. Natural Science (17 units to include):
      1. Life Science (3 units)
      2. Physical Science (14 units)
         Chemistry 200
         Physics 165
         Physics 196
         Physics 197
   B. Social and Behavioral Sciences (3 units)
   C. Humanities (9 units to include three of the four areas 1, 2, 3, 4)

III. Explorations: 6 units
   At least three of the Explorations units must be from Social and Behavioral Sciences and three must be cross-cultural.
   At least nine of the total General Education units must be at the upper division level and may include courses listed in Explorations as well as approved course substitutions taken after the student has attained junior class standing.

General Engineering Major*

With the B.S. Degree

The major in engineering is a program offering the student flexibility not available in the designated degree programs of aerospace, civil, electrical, and mechanical engineering. The specific program, meeting the intent of the designated degree program requirements, must be planned by the student in concert with a faculty committee. The committee and program must be approved by the Dean of the College of Engineering.

* No students will be admitted to this program during the current academic year.

Minor in Engineering

The minor in engineering, intended for students in other academic areas of the university, consists of 15 units in engineering, 12 units of which must be in upper division courses. The courses must be approved by the Dean of the College of Engineering. Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

LOWER DIVISION COURSES IN ENGINEERING

120. Engineering Problem Analysis (2) I, II
   One lecture and three hours of laboratory
   Prerequisite: Concurrent registration in Mathematics 150
   Analysis of engineering problems and solutions using the digital computer. Fundamentals of programming and programming language commands.

140. Engineering Measurement Analysis (2) I, II
   Prerequisite: Mathematics 140

150. Control of the Human Environment (3) I, II
   Man's interaction with the land, water and air environment; environmental pollution; role of engineering in controlling man's environment.

210. Elements of Interactive Computer Graphics (3) I, II
   Prerequisite: Credit or concurrent registration in Mathematics 150.

296. Experimental Topics (1-4)
   Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of six units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

UPPER DIVISION COURSES IN ENGINEERING

(Reserved for Undergraduates)

310. Methods of Analysis (3) I, II
   Prerequisite: Mathematics 152 with minimum grade of C.
   Selected topics from ordinary differential equations, the Laplace transform, Fourier series, and linear algebra, with engineering applications.

410. Computer-Aided Design (3) II
   Prerequisites: Engineering 120, 210, 310, and junior standing in engineering major.
   Computer-aided design and drafting. Theory of computer graphics, approaches to graphing to develop complex figures. Animation techniques. Hidden line removal, interactive design, introduction to contemporary programs for automated design, drafting and numerical control programming.

420. Intermediate Engineering Problem Analysis (3)
   Prerequisite: Engineering 120.
   Advanced use of FORTRAN and other computer programming languages for engineering problem analysis.

430. Principles of Engineering Economy (3) I, II
   Prerequisite: Mathematics 152.
   Application of the mathematics of finance to engineering and managerial decision making.

496. Advanced Engineering Topics (1-3) I, II
   Prerequisite: Minimum grade point average of 2.0 in engineering.
   Modern developments in engineering. See Class Schedule for specific content. Maximum credit six units for any combination of Engineering 496, 499 and 596 applicable to a bachelor's degree.
UPPER DIVISION COURSES IN ENGINEERING
(Also Acceptable for Advanced Degrees)

510. Methods of Analysis (3) I, II
Prerequisite: Engineering 310 with minimum grade of C.
Selected topics from vector calculus, partial differential equations, and complex analysis,
with engineering applications.

511. Digital Solutions of Engineering Problems (3)
Prerequisites: Engineering 120 or Mathematics 107, and Engineering 310.
Digital solution of classes of engineering problems. Application of numerical methods with
consideration of limitations imposed by computer and programming language characteristics.

GRADUATE COURSES IN ENGINEERING
Refer to the Graduate Bulletin.

Aerospace Engineering
and Engineering Mechanics

Faculty
Emeritus: Shults
Chair: Conly
Professors: Conly, Dharmarajan, Krishnamoorthy, McGhie, Narang, Pierucci, Wang
Associate Professor: Moses
Assistant Professor: Nosseir
Lecturers: Busnaina, Faulkner

Offered by the Department
Master of Science degree in aerospace engineering.
Major in aerospace engineering with the B.S. degree.

Aerospace Engineering Major
With the B.S. Degree

Students with the option in Aerospace Engineering must include in their program a
sequence of fundamental courses. In addition, the students have the opportunity to satisfy their
particular areas of interest by selecting a pattern of study indicated in the sequence below. This
pattern includes typical aerospace engineering topics, such as aerospace vehicle design,
performance, structural analysis, aerodynamics, and propulsion. The students' choice of elective
courses and area of specialization must be made in consultation with their adviser and
documented by the filing of an approved master plan during the first semester of their junior
year.

Upper Division Writing Requirement: Departmental screening in AE 303, or passing the
University Writing Examination, or completing one of the approved writing courses with a grade
of C (2.0) or better.

The requirements for the major in aerospace engineering are described as follows:

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Semester</td>
<td>Spring Semester</td>
</tr>
<tr>
<td>Chem. 200, General</td>
<td>5</td>
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<tr>
<td>Math. 150, Single Variable Calc.</td>
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<tr>
<td>General Education</td>
<td>6</td>
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<tr>
<td>AE 123, The Aerospace Engineer</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>17</td>
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<tr>
<td></td>
<td></td>
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<tr>
<td>Sophomore Year</td>
<td>Spring Semester</td>
</tr>
<tr>
<td>Fall Semester</td>
<td>Spring Semester</td>
</tr>
<tr>
<td>Math. 152, Multivariable Calc.</td>
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</tr>
<tr>
<td>EM 200, Statics</td>
<td>3</td>
</tr>
<tr>
<td>General Education</td>
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<tr>
<td>American Institutions</td>
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<tr>
<td>Phys. 196, Principles</td>
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<tr>
<td>Junior Year</td>
<td>Spring Semester</td>
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<td>Fall Semester</td>
<td>Spring Semester</td>
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<tr>
<td>ME 350, Thermodynamics</td>
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<tr>
<td>AE 301, Low Speed Aerody.</td>
<td>3</td>
</tr>
<tr>
<td>CE 301, Intro. to Solid Mech</td>
<td>3</td>
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<tr>
<td>EM 341, Fluid Mechanics Lab.</td>
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<tr>
<td>General Education</td>
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</table>

| | | | |
| | | | 17 |
### UPPER DIVISION COURSES IN AEROSPACE ENGINEERING

#### Fall Semester — All Specializations

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
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<tbody>
<tr>
<td>Professional Elective</td>
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<tr>
<td>AE 430, Aircraft Propulsion</td>
<td>3</td>
</tr>
<tr>
<td>AE 440, Aircraft Stab. &amp; Control</td>
<td>3</td>
</tr>
<tr>
<td>AE 460A, Aerosp. Engr. Appl.</td>
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<tr>
<td>General Education</td>
<td>3</td>
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<td></td>
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#### Spring Semester — According to Specialization

<table>
<thead>
<tr>
<th>Aerodynamics</th>
<th>Units</th>
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<tbody>
<tr>
<td>AE 460B, Aerosp. Engr. Appl.</td>
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<tr>
<td>AE 480, Aeroelast. &amp; Acoustics</td>
<td>2</td>
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<tr>
<td>Upper Div. Gen. Education</td>
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<tr>
<td>Choose any two courses:</td>
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<tr>
<td>EM 540, Intern. Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>AE 501, Comp. Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>AE 510, Matrix Meth. Aero. Struct.</td>
<td>3</td>
</tr>
<tr>
<td>AE 530, Rocket &amp; Space Propuls.</td>
<td>3</td>
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<table>
<thead>
<tr>
<th>Aerospace Structures</th>
<th>Units</th>
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<tbody>
<tr>
<td>AE 460B, Aerosp. Engr. Appl.</td>
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<tr>
<td>AE 480, Aeroelast. &amp; Acoustics</td>
<td>2</td>
</tr>
<tr>
<td>Upper Div. Gen. Education</td>
<td>3</td>
</tr>
<tr>
<td>Choose any two courses:</td>
<td></td>
</tr>
<tr>
<td>AE 501, Comp. Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>AE 510, Matrix Meth. Aero. Struct.</td>
<td>3</td>
</tr>
<tr>
<td>AE 540, Aerosp. Struct. &amp; Control II</td>
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<tr>
<td></td>
<td>14</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Propulsion &amp; Flight Mechanics</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AE 460B, Aerosp. Engr. Appl.</td>
<td>3</td>
</tr>
<tr>
<td>AE 480, Aeroelast. &amp; Acoustics</td>
<td>2</td>
</tr>
<tr>
<td>Upper Div. Gen. Educ.</td>
<td>3</td>
</tr>
<tr>
<td>Choose any two courses:</td>
<td></td>
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<tr>
<td>AE 520, Int. Aero. Flight Mech</td>
<td>3</td>
</tr>
<tr>
<td>AE 530, Rocket &amp; Space Propuls</td>
<td>3</td>
</tr>
<tr>
<td>AE 540, Aerosp. Struct. &amp; Contrl. II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>14</td>
</tr>
</tbody>
</table>

### LOWER DIVISION COURSE IN AEROSPACE ENGINEERING

123. The Aerospace Engineer (1)

Introduction to professional aerospace engineering. Emphasis on aeronautics and astronautics.

### UPPER DIVISION COURSES IN AEROSPACE ENGINEERING

#### Intended for Undergraduates

**301. Low Speed Aerodynamics (3)**

Prerequisites: Credit or concurrent registration in Engineering Mechanics 340. 
Subsonic flow, airfoil and wing theory, experimental characteristics of wing sections, high lift devices.

**302. High Speed Aerodynamics (3)**

Prerequisite: Aerospace Engineering 301. 
Supersonic flow, twodimensional compressible flow, wings in compressible flow, twodimensional method of characteristics, transonic flow.

### UPPER DIVISION COURSES IN AEROSPACE ENGINEERING

#### Also Acceptable for Advanced Degrees

**303. Experimental Aerodynamics (3)**

- One lecture and three hours of laboratory.
- Prerequisites: Credit or concurrent registration in Aerospace Engineering 301.

**310A-310B. Aerospace Structural Analysis (3-3)**

- Prerequisite: Civil Engineering 301. 
- Aerospace Engineering 310A is prerequisite to 310B.
- Methods of structural analysis including both the static and dynamic aspects of problems encountered in the flight of aerospace vehicles.

**320. Aerospace Flight Mechanics (3)**

- Prerequisites: Engineering Mechanics 220, and Engineering 310.
- Aerodynamics and dynamics of ballistic missiles; guidance systems; orbits of spacecraft; trajectory analysis; effects of aerodynamics, mass, rotation, and shape of the earth on ballistic and spacecraft trajectories. Computer programming and problem solving will be emphasized.

**430. Aircraft Propulsion Systems (3)**

- Prerequisite: Aerospace Engineering 301 or Mechanical Engineering 450.
- Theory and performance characteristics of aircraft propulsion systems including reciprocating engines, turbojets, ramjets, etc.

**440. Aircraft Stability and Control (3)**

- Prerequisite: Aerospace Engineering 303.
- Static stability and control; general equations of unsteady motion, stability, derivatives, stability of uncontrolled motion, response of aircraft to actuation of controls.

**460A. Aerospace Engineering Applications (2)**

- Six hours of laboratory.
- Prerequisites: Aerospace Engineering 302, 303 and 310A.
- Student projects in aerospace design.

**460B. Aerospace Engineering Applications (3)**

- One lecture and five hours of design activity.
- Prerequisite: Aerospace Engineering 460A.
- Student projects in aerospace design.

**480. Aeroelasticity and Acoustics (2)**

- Prerequisites: Aerospace Engineering 302 and 310B.

**496. Advanced Aerospace Engineering Topics (1-3)**

- Prerequisite: Consent of instructor.
- Modern developments in engineering. See Class Schedule for specific content. Maximum credit six units for any combination of Aerospace Engineering 496 and 499.

**499. Special Study (1-3)**

- Prerequisites: Minimum grade point average of 2.0 in engineering or approval of the Academic and Ethical Standards Committee of the College of Engineering.
- Individual study. Maximum credit six units for any combination of Aerospace Engineering 496 and 499.

### OTHER ELECTIVES MAY BE SUBSTITUTED WITH PERMISSION OF THE ADVISOR AND DEPARTMENT CHAIR.
520. Intermediate Aerospace Flight Mechanics (3) I
Prerequisite: Aerospace Engineering 320
A continuation of Aerospace Engineering 320 to include orbit determination techniques, general and special perturbations, artificial satellites, rocket dynamics and transfer orbits, earth-moon trajectories, and interplanetary trajectories.

530. Rocket and Space Propulsion (3) II
Prerequisite: Aerospace Engineering 430
Equilibrium combustion thermodynamics. Performance of rocket propelled vehicles. Rocket propulsion fundamentals. Topics in chemical (solid and liquid) and electrical propulsion systems.

540. Aircraft Stability and Control II (3) II
Prerequisite: Aerospace Engineering 440
Dynamic stability and control of rigid aircraft; general equations of unsteady motion, stability derivations, perturbed state thrust forces and moment, special problems in dynamic stability and response.

Engineering Mechanics

LOWER DIVISION COURSES

200. Statics (3) I, II
Prerequisites: Physics 195 and credit or concurrent registration in Mathematics 151.
Force systems, equilibrium, structures, distributed forces, friction, virtual work, moments of inertia, vector algebra.

202. Mechanics for Electrical Engineers (3) I, II
Prerequisites: Physics 195 and credit or concurrent registration in Mathematics 151.
Essentials of mechanics of particles and rigid bodies, for engineering applications. Emphasis on particle dynamics. Intended for Electrical Engineering majors. Not open to students with credit in Engineering Mechanics 200 or 220.

220. Dynamics (3) I, II
Prerequisite: Engineering Mechanics 200 with a minimum grade of C.
Kinetics of a particle; central force motion; systems of particles; work and energy, impulse and momentum, moments and products of inertia; Euler's equations of motion; vibration and time response; engineering applications.

UPPER DIVISION COURSES IN ENGINEERING MECHANICS
(Also Acceptable for Advanced Degrees)

521. Advanced Mechanics of Deformable Media (3) II
Prerequisites: Aerospace Engineering 310B and Engineering 510.
Application of advanced topics in mechanics of deformable media to the design of aerospace structural components. Theory of failure, curved beams, beams on elastic foundation, thick-walled cylinders, fracture mechanics and optimization of structures.

540. Intermediate Fluid Mechanics (3)
Prerequisites: Credit or concurrent registration in Engineering Mechanics 340, and Engineering 510.
Kinematics of fluid motion, Conservation of mass, momentum, and energy ideal and viscous flows and applications. Boundary layer approximations.

596. Advanced Engineering Mechanics Topics (1-3) I, II
Prerequisite: Consent of instructor.

GRADUATE COURSES IN AEROSPACE ENGINEERING AND ENGINEERING MECHANICS
Refer to the Graduate Bulletin.
Civil Engineering

Faculty
Emeritus: Capp, Quiet
Chair: Chou
Professors: Chang, H., Chou, Johnson, Noorany, Ponce, Stone, Stratton
Associate Professors: Banks, Derzulian, Fragaszy, Sharabi, Westermo

Offered by the Department
Master of Science degree in civil engineering.
Major in civil engineering with the B.S. degree.

Civil Engineering Major

With the B.S. Degree

The requirements for the major in civil engineering are described as follows:

- Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.
- The students' choice of elective courses must be made in consultation with their advisor and documented by the filing of an approved master plan during the first semester of their junior year.

UPPER DIVISION COURSES IN CIVIL ENGINEERING

(intended for Undergraduates)

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td>CE 444, Applied Hydraulics</td>
<td>3</td>
</tr>
<tr>
<td>CE 462, Soil Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>CE 463, Soil Mech. Lab</td>
<td>1</td>
</tr>
<tr>
<td>CE 481, Transportation Engr.</td>
<td>3</td>
</tr>
<tr>
<td>Professional Electives</td>
<td>12</td>
</tr>
<tr>
<td>General Education</td>
<td>3</td>
</tr>
<tr>
<td>Approved as part of the student's master plan.</td>
<td></td>
</tr>
</tbody>
</table>

LOWER DIVISION COURSE IN CIVIL ENGINEERING

301. Introduction to Solid Mechanics (3) I, II
Prerequisites: Engineering Mechanics 220 and credit or concurrent registration in Engineering 310.
Mechanics of solid deformable bodies involving analytical methods for determining strength, stiffness, and stability of load-carrying members. (Formerly numbered Engineering Mechanics 301.)

302. Solid Mechanics Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Civil Engineering 301.
Laboratory studies in solid mechanics. Experimental stress analysis. Experimental confirmation of theory. (Formerly numbered Engineering Mechanics 302.)

321. Structural Analysis I (4) I, II
Prerequisite: Civil Engineering 301 with minimum grade of C.
Principles of mechanics applied to analysis of beams, frames, trusses, and three-dimensional frameworks. Graphical methods, influence lines, deflections, introduction to statically indeterminate structures and moment distribution.

355. Civil Engineering Environmental Studies (2) II
Prerequisites: Chemistry 200 and credit or concurrent registration in Engineering Mechanics 340.
The application of civil engineering methodology to the solution of environmental problems. (Formerly numbered Civil Engineering 455.)

421. Reinforced Concrete Design (3) I, II
Prerequisite: Civil Engineering 321 with minimum grade of C.
Properties and characteristics of reinforced concrete; design of structural components.

422. Timber Design (2) I
Prerequisite: Civil Engineering 321 with a minimum grade of C.
Physical and mechanical properties of wood. Sawn lumber, glulam, plywood. Design of various types of wood structures. Connection design. (Formerly numbered Civil Engineering 523.)

444. Applied Hydraulics (3) I, II
Prerequisite: Engineering Mechanics 340.
Open channel and pressure conduit flow, pumps and turbines, hydroelectric power, and water law.
445. Applied Hydrology (3) I, II
Prerequisite: Civil Engineering 444 with a minimum grade of C.
Precipitation, streamflow, frequency analysis, hydrologic routing, urban and small watershed hydrology, hydrologic design.

462. Soil Mechanics (3) I, II
Prerequisites: Geological Sciences 253, Civil Engineering 301 with a minimum grade of C, credit or concurrent registration in Engineering Mechanics 340, and concurrent registration in Civil Engineering 463.
Mechanics of soils as they apply to engineering problems, soil classification, compaction, swelling, consolidation, strength and permeability. Applications to geotechnical engineering problems.

463. Soil Mechanics Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Concurrent registration in Civil Engineering 462.
Laboratory procedures of soil testing for engineering problems.

465. Foundation Engineering (3) II
Prerequisites: Civil Engineering 462 and 463 with minimum grades of C.
Soil mechanics theories applied to the design of shallow and deep foundations; lateral pressure of soils, design of retaining walls.

479. Construction Materials (3) II
Two lectures and three hours of laboratory.
Prerequisites: Civil Engineering 462 and 481.
Selection, design and control of mixes of portland cement and asphalt concrete. Properties of these and other materials used in construction. (Formerly numbered Civil Engineering 579.)

481. Transportation Engineering (3) I, II
Prerequisite: Civil Engineering 218 with minimum grade of C.
Fundamentals of transportation, design of different modes of transportation for moving people and goods; and corresponding terminal facilities.

482. Highway Engineering (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Civil Engineering 491 with minimum grade of C.
Highway planning, economics, and administration; geometric design; traffic engineering; subgrade structure; bituminous and portland-cement concrete pavements.

492. Construction Project Planning (2) I, II
Prerequisites: Civil Engineering 321 and 481; credit or concurrent registration in Engineering
430.
Analysis of complex engineering and industrial systems using critical path methods; planning and control parameters; network analysis including optimization of deterministic and stochastic models, resource allocation, scheduling; student projects.

496. Advanced Civil Engineering Topics (1-3) I, II
Prerequisites: Minimum grade point average of 3.0 and consent of instructor.
Modern developments in civil engineering. See Class Schedule for specific content. Maximum credit six units for any combination of Civil Engineering 496, 499 and 596.

505. Design of Steel Structures (3) II
Prerequisite: Civil Engineering 321 with a minimum grade of C.
Mechanical behavior of structural steel. Design of steel beams, girders, columns and members subjected to combined stresses. Design of various types of connections of steel structures; plate girders, continuous beams and rigid frames.

530. Open Channel Hydraulics (3) I, II
Prerequisite: Civil Engineering 444 with minimum grade of C.
Open channel flow theory, analysis and problems, including studies of critical flow, uniform flow, gradually varied and rapidly varied flow—all as applied to the design of channels, spillways, energy dissipators, and gravity pipelines. Not open to students with credit in Civil Engineering 630.

540. Coastal and Ocean Engineering (3) I
Prerequisites: Civil Engineering 321, 444, and 462 with minimum grade of C.
Types, design features and methods of construction of coastal facilities and offshore structures including harbors, underwater fills, offshore platforms and oil storage reservoirs.

555. Water and Wastewater Engineering (3) I
Prerequisite: Civil Engineering 355 with minimum grade of C.

596. Advanced Civil Engineering Topics (1-3) I, II
Prerequisites: Minimum grade point average of 3.0 and consent of instructor.
Modern developments in civil engineering. See Class Schedule for specific content. Maximum credit six units for any combination of Civil Engineering 496, 499 and 596.

GRADUATE COURSES IN CIVIL ENGINEERING
Refer to the Graduate Bulletin.
### Electrical Engineering Major

**With the B.S. Degree**

The program below describes the requirements for the degree. Each course specifically listed in the program is required. In addition, the total number of units specified in each of the elective categories represents a minimum requirement. These are: General Education, 24 units; American Institutions, 6 units; Professional Electives, 27 units. The semester in which each course or elective is listed in the program below is typical, but not required. Any variation that satisfies course prerequisites is acceptable.

The General Education and American Institutions electives must satisfy University requirements described elsewhere in this catalog. Professional Electives include all upper division EE courses and approved upper division courses in other departments. The 27 Professional Elective units must include at least nine units of EE design (EE 370, 420, 450, 470, 475, 520, 530, 534, 540, 554, 555, 570, 571, 580 and 581); at least three units of basic engineering (ENGR 301, EM 340, and ME 350/352); and at least one unit of EE laboratory.

Elective units must include at least nine units of EE design (EE 373, 420, 450, 470, 475, 520, 530, 534, 540, 554, 555, 570, 571, 580 and 581); at least three units of basic engineering (CE 301, EM 340, and ME 350/352), and at least one unit of EE laboratory. The student's choice of electives is subject to the approval of his/her faculty adviser and the department chair. The student must file an approved Major Plan during the first semester of his/her junior year.

#### Upper Division Writing Requirement
Passing the University Writing Examination or completing one of the approved writing courses in English or Information Systems with a grade of C (2.0) or better.

### Faculty

**Emeritus:** Brown, Chan, Learned, Mann, Skaar, Walling

**Chair:** Lin, M.

**Professors:** Abut, Chang, Harris, I., Harris, J., Iosupovicz, Lee, Lin, M., Lodge, Manno, Massey, Stuart

**Associate Professors:** Lin, C., Nunez, Panos, Suto, Szeto

**Assistant Professor:** Thyagarajan

**Lecturers:** Wilson, Yoeli

**Offered by the Department of Electrical and Computer Engineering**

Master of Science degree in electrical engineering.

Major in electrical engineering with the B.S. degree.

### LOWER DIVISION COURSES IN ELECTRICAL ENGINEERING

#### Fall Semester

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Units</th>
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<tr>
<td>Chem. 200, General Chemistry</td>
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<tr>
<td>Math 150, Single Variable Calc.</td>
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<tr>
<td>Engr. 129, Engr. Prob. Anal.</td>
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<tr>
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#### Spring Semester

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<tr>
<td>Phys. 195, Principles</td>
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<tr>
<td>Math. 151, Calc. and Anal. Geom.</td>
<td>4</td>
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<tr>
<td>General Education</td>
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#### Sophomore Year

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<td>Math. 152, Multivariable Calc.</td>
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<tr>
<td>EM 202, Mech. for Elec. Engrs.</td>
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</tr>
<tr>
<td>Phys. 196, 196L, Principles</td>
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<tr>
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### Junior Year

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<tr>
<td>EE 380, 390L, Elec. Energy Conv.</td>
<td>4</td>
</tr>
<tr>
<td>EE 310, Network Analysis</td>
<td>3</td>
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<tr>
<td>EE 340, Elect. &amp; Mag. Fields</td>
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<tr>
<td>EE 330, 330L, Fund. Electron</td>
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<tr>
<td>EE 371, Computer Organization</td>
<td>3</td>
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<tr>
<td>Engr. 310, Meth. of Analysis, or Math. 340A, Meth. of Applied Math</td>
<td>3</td>
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### Senior Year

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<th>Course Title</th>
<th>Units</th>
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<td>Professional Electives</td>
<td>12</td>
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<tr>
<td>General Education</td>
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</tr>
</tbody>
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### LOWER DIVISION COURSES IN ELECTRICAL ENGINEERING

#### 210. Electric Circuits (3) I, II
Prerequisites: Credit or concurrent registration in Physics 196 and Mathematics 151. Circuit analysis by reduction methods, source transformations, loop and nodal analyses; alternating current circuits, impedance, power and phasor diagrams.

#### 270. Digital Systems (3) I, II
Prerequisite: Mathematics 152.
Modeling, analysis and design of digital systems, primarily at the Logic Design level. Combinational and sequential networks. Not open to students with credit in Electrical Engineering 370.

### UPPER DIVISION COURSES IN ELECTRICAL ENGINEERING

#### 303. Electronics, Instrumentation, and Electrical Energy Conversion (3) I, II
Prerequisite: Electrical Engineering 210.
Theory and application of electron tubes, diodes, and transistors in typical electronic circuits, instrumentation and electronic measuring devices. Fundamentals of electromagnetic energy conversion including motors and transformers. Not open to students in electrical engineering option.

#### 303L. Electrical Engineering Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Electrical Engineering 303.
A laboratory course to include selected experiments in electrical circuits, electronics, and electrical machinery.

#### 310. Network Analysis (3) I, II
Prerequisites: Electrical Engineering 210 and Mathematics 152.
Loop and nodal analysis using general network equations, network theorems, frequency and time response using poles and zeros. Two-port parameters.

#### 330. Fundamentals of Engineering Electronics (3) I, II
Prerequisite: Electrical Engineering 210.
Application of diodes, transistors, electron tubes, and thyristors in typical electronic circuits. Analysis and design of rectifiers and filters, and elementary amplifiers. Emphasis on their utilization in engineering equipment and systems.

#### 330L. Engineering Electronics Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Electrical Engineering 330.
Experimental study of laboratory instruments, diodes, rectifier circuits, filters, silicon controlled rectifiers, tubes, transistors, and amplifiers.
340. Electric and Magnetic Fields (3) I, II
Electrostatic and magnetostatic field theory using vector notation; Coulomb's Law, Gauss' Law and potential theory. Solutions to Poisson's and Laplace's equations; capacitance and inductance. Time-varying electric and magnetic fields. Maxwell's equations.

371. Computer Organization (3) I
Prerequisites: Engineering 120 and Electrical Engineering 270.
Computer organization and assembly language programming. Programming and operation of one or more small computers, including input/output programming.

373. Computer Design (3) I
Prerequisites: Electrical Engineering 270 and credit or concurrent registration in Electrical Engineering 371.
Systematic techniques for designing digital computers and other complex digital systems. Machine arithmetic, Register Transfer Level design, hardwired and microprogrammed control units. Not open to students with credit in Electrical Engineering 573.

380. Electrical Energy Conversion (3) I, II
Prerequisites: Electrical Engineering 210.
Magnetic circuits, transformers and polyphase AC networks. Fundamentals of electromechanical energy conversion; induction motors, synchronous machines and DC machines.

380L. Electrical Energy Conversion Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Electrical Engineering 380.
Experimental study of DC, single and polyphase AC circuits, transformers, and machines.

403. Biomedical Instrumentation (3) I
Instrumentation systems to monitor, control and record physiological functions.
Prerequisite: Electrical Engineering 303 or 330.

410. Advanced Network Analysis (3) I, II
Prerequisites: Electrical Engineering 310 and Engineering 310 or Mathematics 340A.
Transient analysis of circuits containing resistance, inductance, and capacitance with various input wave forms by means of the Laplace-transform method.

420. Control Systems Components (3) II
Prerequisites: Electrical Engineering 310, 330 and 380.
Position transducers, phase-sensitive demodulators, static magnetic and rotating amplifiers, and servomotors. Derivation of component transfer functions.

420L. Control Systems Components Laboratory (1) I
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Electrical Engineering 420.
Experimental determination of transfer functions for control system components.

430. Analysis and Design of Electronic Circuits (3) I, II
Prerequisites: Electrical Engineering 310, 330 and Engineering 310 or Mathematics 340A.
A unified treatment of vacuum-tube and transistor voltage and power amplifiers utilizing graphical methods and equivalent circuits, feedback theory and tuned amplifiers.

430L. Electronic Circuits Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Electrical Engineering 430.
Vacuum-tube and transistor dynamic characteristics; single stage and multistage amplifier circuits including feedback and tuned amplifiers.

450. Communication Networks (3) I
Prerequisites: Electrical Engineering 310, 340 and Engineering 310 or Mathematics 340A.
Theory and application of transmission lines, including analysis by matrix notation; use of Smith chart and other transmission line charts; impedance-matching with transmission line stubs and lumped constants; theory and design of constant-k, m-derived, and other types of filter networks.

470. Digital Circuits (3) I
Prerequisites: Electrical Engineering 270, credit or concurrent registration in Electrical Engineering 430.
Operating characteristics, specifications, and applications of standard commercially available high-speed digital integrated circuit devices.

470L. Digital Logic Laboratory (1) I
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Electrical Engineering 470.
Hands-on experience in characterization and application of standard digital integrated circuit devices.

475. Microprocessors (3) II
Prerequisite: Electrical Engineering 371.
Microprocessors and microprocessor support devices. Design of microprocessor-based systems, hardware and software. Not open to students with credit in Electrical Engineering 575.

475L. Microprocessor Laboratory (1) II
Three hours of laboratory.
Prerequisites: Electrical Engineering 470, 470L, and credit or concurrent registration in Electrical Engineering 475.
Design, documentation, assembly, circuit checkout, programming, and software validation of a microprocessor-based system.

496. Advanced Electrical Engineering Topics (1-3) I, II
Prerequisite: Consent of instructor.
Modern developments in electrical engineering. See Class Schedule for specific content.
Maximum credit six units for any combination of Electrical Engineering 496, 499 and 596.

499. Special Study (1-3) I, II
Prerequisite: Approval of project adviser and department chair.
Individual study. Maximum credit six units for any combination of Electrical Engineering 496, 499 and 596.

UPPER DIVISION COURSES IN ELECTRICAL ENGINEERING
(Also Acceptable for Advanced Degrees)

503. Computer Hardware Organization (3)
Prerequisites: Engineering 120 or Mathematics 107, at least junior standing; some knowledge of assembly language preferred.
Computer hardware organization and design, including combinational and sequential networks, using integrated circuits. Not open to E.E. majors.

520. Feedback Control Systems (3) I
Prerequisite: Electrical Engineering 410; 420 recommended.
Analysis of regulatory systems including servomechanisms by the Laplace transform method. System performance and stability; Nyquist, Bode, and root-locus diagrams; elementary synthesis techniques. Practical components and examples of typical designs.

521. Advanced Feedback Control Systems (3) II
Prerequisite: Electrical Engineering 520.
A continuation of Electrical Engineering 520 to include feedback compensation, advanced compensation techniques, signal flow theory, state-variable techniques, introduction to nonlinear and sampled-data control systems.

530. Transistor Circuit Analysis (3) I, II
Prerequisite: Electrical Engineering 430.
Analysis and design of transistor voltage and power amplifier circuits by use of duality and matrix methods. Feedback amplifiers, audio amplifiers, video amplifiers, power supplies and oscillators; transient analysis and noise considerations.
534. Solid-State Devices (3) I
   Prerequisite: Electrical Engineering 430.
   Conduction theory of solids; characteristics of tunnel, backward, breakdown, multilayer and
   varactor diodes; silicon controlled rectifiers and switches, unijunction transistors, hot electron
devices. Lasers and laser applications.

540. Microwave Communications (3) II
   Prerequisite: Electrical Engineering 340; Engineering 510 recommended.
   Applications of Maxwell's equations to wave propagation; skin effect, circuit impedance
   elements; vector potential, and other time-varying electrical phenomena; waveguides and
   resonators, strip line circuits, electromagnetic radiation.

540L. Microwave Measurements Laboratory (1) II
   Three hours of laboratory.
   Prerequisites Credit or concurrent registration in Electrical Engineering 430L and 540.
   Experimental study of microwave generation including klystrons, Gunn and IMPATT oscil-
lators. TWI and microwave transistor amplifiers. Microwave modulation and detection. Micro-
wave transmission and antennas.

553. Stochastic Signals (3) II
   Prerequisite: Engineering 310 or Mathematics 340A.
   Random signals, correlation functions, power spectral densities, the Gaussian process,
narrow band processes. Applications to communication systems.

554. Communication Principles and Circuits (3) I, II
   Prerequisite: Electrical Engineering 430.
   Signal transmission in linear networks; modulators and detectors; wide-band and narrow-
   band amplifiers; oscillators; AM, FM, and phase modulation; transient response of amplifiers.

554L. Communication Circuits Laboratory (1) I
   Three hours of laboratory.
   Prerequisite: Electrical Engineering 430L.
   Regulated power supply systems; oscillators, modulator, detector, and switching circuits;
superheterodyne receivers and television circuitry.

555. Modulation Theory (3) I
   Prerequisite: Electrical Engineering 410.
   Theory and performance characteristics of modulation and demodulation; spectral charac-
teristics and noise performance of carrier systems: amplitude, frequency and phase, pulse
   coded, and compound modulation.

558. Digital Communication Systems (3) II
   Prerequisite: Engineering 310.
   Foundations and interrelationships of subsystems in modern digital communication
   systems. Regulatory considerations, channel descriptions, modems, error rates, digital coding
   of speech, line coding, intersymbol interference, networking, error control and cryptography.

570. Advanced Digital Circuits (3) II
   Prerequisite: Electrical Engineering 470.
   Digital applications of linear devices, the digital/analog interface, and ultra high speed logic
devices.

571. Synchronous Sequential Circuits (3) I
   Prerequisite: Electrical Engineering 373.
   Systematic design of high speed synchronous sequential circuits, using standard logic
   elements and microprogrammable bii slice modules.

575. Microprocessors (3) I, II
   Prerequisites: Electrical Engineering 470 and 573.
   Microprocessor organization and operation. Comparative analysis of commercially avail-
able microprocessors. Circuit design and programming of microprocessor-based computing and
   controller systems. Not open to students with credit in Electrical Engineering 475.

576. Microprocessor Systems Development (3) I
   Prerequisite: Electrical Engineering 475.
   Design of microprocessor-based systems using modern development systems. Hardware
   and software development. Assembly language and PASCAL. Testing by emulation and real-
time analysis.
Mechanical Engineering

Faculty
Emeritus: Bauer, Bilterman, M. Rao, Stone
Chair: Bedore
Professors: Bedore, Craig, Fitz, Hussain, Mansfield, Morgan, Murphy, Ohnysty, Pinto, Rao, S.
Associate Professor: Pierce
Assistant Professor: Thompson
Lecturers: Broniarek, Hoyt, Weber

Offered by the Department
Master of Science degree in mechanical engineering.
Major in mechanical engineering with the B.S. degree.

Mechanical Engineering Major

With the B.S. Degree
All students in Mechanical Engineering pursue a common program of basic sciences, engineering, and mechanical engineering fundamentals. In addition, students are provided with the opportunity to select a pattern of study to satisfy their areas of interest. This pattern of study is indicated in the sequence below as "professional electives" and may be selected from available courses in controls, energy conversion, gas dynamics, heat transfer, machine design, materials, thermodynamics, vibrations, and other areas. The students' choice of elective courses must be made in consultation with their advisor and documented by the filing of an approved master plan during the first semester of their junior year.

Upper Division Writing Requirement. Passing the departmental screening examination, a part of Mechanical Engineering 310, or passing the University Writing Examination or English courses must be available courses in controls, energy conversion, gas dynamics, heat transfer, machine design, materials, thermodynamics, vibrations, and other areas. The students' choice of elective courses must be made in consultation with their advisor and documented by the filing of an approved master plan during the first semester of their junior year.

UPPER DIVISION COURSES IN MECHANICAL ENGINEERING

Fall Semester
Chem. 200, General Chemistry ........ 5
Math. 150, Single Variable Calc. ....... 5
Engr. 120, Engr. Prob. Anal. .......... 2
General Education .................. 3
Freshman Year
Units Spring Semester Units
Chem. 202, Chem. for Engrs. ......... 3
Math. 151, Calc. and Anal. Geom. .... 4
ME 195, Graphics & Processes ....... 3
Phys. 195, Principles ............... 3
General Education ................. 3
Fall Semester
Math. 152, Multivariable Calc. ...... 4
EM 260, Statics ................... 3
ME 260, Engr. Materials ............. 3
Phys. 196, Principles ............... 3
American Institutions ............... 3
Sophomore Year
Units Spring Semester Units
EE 210, Electric Circuits ............ 3
EM 220, Dynamics ................ 3
PHYS 310, Methods of Analysis .... 3
American Institutions ............... 3
General Education ................. 3
Fall Semester
CE 301, Intro. to Solid Mech. ..... 3
ME 310, Engr. Design Intro. ....... 3
ME 340, Materials and Processes ... 3
ME 350, Thermodynamics .......... 3
ME 390, Engr. Sys. Lab. Intro. .... 2
General Education ................. 3
Junior Year
Units Spring Semester Units
EE 303, Electronics, Instrum. and 
Elect. Energy Conv. ............. 3
EM 340, Fluid Mechanics ......... 3
ME 450, Engr. Thermodynamics ... 3
General Education ................. 3
Fall Semester
Chem. 201, General, may be taken as equivalent to Chemistry 202.

190. Engineering Drawing (2) I, II
Six hours of laboratory.
Prerequisite: Three hours of guided design activities.

One lecture and six hours of laboratory.
Prerequisite: One year of high school drafting.

260. Engineering Materials (3) I, II
Prerequisite: Chemistry 200.
Atomic and molecular structure of materials utilized in engineering. Analysis of the relationships between structure of materials and their mechanical, thermal, electrical, corrosion and radiation properties, together with examples of specific application to engineering problems. (Formerly numbered Mechanical Engineering 260.)

UPPER DIVISION COURSES IN MECHANICAL ENGINEERING

(Indended for Undergraduates)

310. Engineering Design: Introduction (3) I, II
Two lectures and three hours of guided design activities.
Prerequisites: Mechanical Engineering majors—English 100 or Linguistics 100 with a grade of C or better. Engineering 120, Mechanical Engineering 195, and Engineering Mechanics 220; non-Mechanical Engineering majors—English 100 with a grade of C or better.

314. Engineering Design: Mechanical Components (3) I, II
Prerequisites: Mechanical Engineering 310 and Civil Engineering 301.
Application of mechanics, physical properties of materials, and solid mechanics to the design of machine elements. Student design projects.

340. Metallic Materials and Processes (3) I, II
Prerequisite: Mechanical Engineering 260.

350. Thermodynamics (3) I, II
Prerequisite: Mathematics 152 and Engineering Mechanics 202 or 220.
Development of the basic laws of thermodynamics and their application to engineering systems.

352. Thermodynamics and Heat Transfer (3) I, II
Prerequisite: Mathematics 152 and Engineering Mechanics 202 or 220.
First and second laws of thermodynamics; heat conduction, convection and radiation. Not acceptable for mechanical engineering majors.
390. Engineering Systems Laboratory: Introduction (2) I, II
One lecture and three hours of laboratory.
Prerequisites: English 100 with a grade of C or better. Electrical Engineering 210, Civil Engineering 301 co-requisite. Engineering 310 co-requisite or Mathematics 340A.
Experience in experimental design, data acquisition, and computer data analysis. Principles of experimentation learned in lecture and applied in experiments selected from subdisciplines in Mechanical Engineering.

395. Engineering Systems Laboratory: Applications (2) I, II
One lecture and three hours of laboratory.
Prerequisite: Mechanical Engineering 390.
Advanced experiment design, data acquisition and computer data analysis. Experience in designing, conducting, and reporting on experiments to acquire knowledge about engineering systems.

410. Creativity In Design (3)
Methods to stimulate creativity in design. Investigation of hidden blocks to creative thought. Emphasis on placing students in a design situation requiring an inventive or creative solution.

415. Principles of Heat Transfer (3) I, II
Analysis of idealized and real internal combustion engine cycles; combustion problems; performance of reciprocating and rotary types of internal combustion engines. Principles of reaction motors.

420. Internal Combustion Engines (3) II
Prerequisite: Mechanical Engineering 350 and credit or concurrent registration in Engineering Mechanics 340.
Further development of the laws of classical thermodynamics. Applications to the design and analysis of energy conversion systems.

470. Principles of Heat Transfer (3) I, II
Heat transfer by conduction, convection, radiation, and combinations thereof.

480. Internal Combustion Engines (3) II
Prerequisite: Mechanical Engineering 450.
Analysis of idealized and real internal combustion engine cycles; combustion problems; performance of reciprocating and rotary types of internal combustion engines. Principles of reaction motors.

490A-490B. Engineering Design: Senior Projects (2-2) I, II
Six hours of guided design activities.
Prerequisites: for 490A: Mechanical Engineering 314, 350, 395, credit or concurrent registration in Mechanical Engineering 470 and Mechanical Engineering 512.
Prerequisites for 490B: Mechanical Engineering 450, 490A.
Applications of engineering principles and design techniques to the designing, building, and testing of an engineering system. A single project is completed in this two-course sequence and is judged completed upon presentation of an oral and a written report.

496. Advanced Mechanical Engineering Topics (1-3) I, II
Prerequisite: Consent of instructor.
Modern developments in mechanical engineering. See Class Schedule for specific content. Maximum credit six units for any combination of Mechanical Engineering 496, 499 and 596.

499. Special Study (1-3) I, II
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units for any combination of Mechanical Engineering 496, 499 and 596.

UPPER DIVISION COURSES IN MECHANICAL ENGINEERING
(Also Acceptable for Advanced Degrees)

510. Advanced Machine Design (3) I, II
Prerequisites: Mechanical Engineering 314 and 340.
Application of advanced topics in strength of materials to the design of mechanical elements. Energy methods, stress concentrations, curved beams, and thick-walled cylinders. Practical application of principles through case studies or design projects.

512. Simulation of Engineering Systems (3) I, II
Two lectures and three hours of laboratory.
Prerequisites: Mechanical Engineering 314, 350 and 395.
Analysis and design of engineering systems using modern analog and digital computers. Simulation of dynamic systems. Application to problems in mechanics, heat transfer, thermodynamics, and control systems.

514. Experimental Stress Analysis (3)
Prerequisite: Mechanical Engineering 314
Advanced study of resistance of materials, failure theories and experimental stress analysis. Methods will include photoelasticity, birefringence, strain gauges, grid methods, and analogs for determining static and dynamic stress distributions. Laboratory demonstrations.

516. Engineering Design: Mechanics (3)
Prerequisite: Mechanical Engineering 510.
Design of linkages, cams, and gears wherein displacement, velocity and acceleration are paramount considerations.

520. Introduction to Mechanical Vibrations (3)
Prerequisites: Mechanical Engineering 512 and Civil Engineering 301
Analysis of mechanical vibration: single- and multi-degree of freedom systems, free and forced vibrations; vibration isolation; vibration absorbers. Theory of vibration measuring instruments.

521. Vibration, Shock and Noise Measurements (3)
Prerequisites: Mechanical Engineering 512 and Civil Engineering 301.
Experimental problems utilizing vibration excitation equipment, recording systems, transducers, sound analysis systems and sound computers.

530. Automatic Control Systems (3)
Prerequisites: Engineering 510 and credit or concurrent registration in Mechanical Engineering 512
Analysis of the dynamic characteristics of control components and systems. Stability and response of closed loop systems: Design of control systems.

540. Nonmetallic Materials (3)
Two lectures and three hours of laboratory.
Prerequisite: Mechanical Engineering 340.
Fundamentals of plastics, reinforced plastics, and ceramics. Analysis of effect of physical properties upon selection of a material for use in design.

542. Production Engineering (3)
Prerequisites: Mechanical Engineering 340 and Engineering 310.
Quantification of quantities including regression analysis, linear programming, network and simulation methods as applied to planning, forecasting, scheduling and maintaining of modern production and manufacturing systems.

544. Advanced Manufacturing Processes (3)
Prerequisites: Mechanical Engineering 195, 314, 340 and Engineering 310.
Theory and techniques of metal cutting, forming, non-cutting metal removal, computer controlled machining.

546. Computer Aided Manufacturing (3)
Prerequisites: Mechanical Engineering 195, 340 and Engineering 120, 310.
Computer controlled manufacturing and assembly techniques and devices. Data bases and special languages.

580. Elements of Energy Conversion (3)
Prerequisite: Mechanical Engineering 350.
Principles of physics and chemistry applied to the analysis of a broad spectrum of energy conversion devices from an engineering point of view.

582. Thermal Environmental Engineering (3)
Prerequisite: Mechanical Engineering 470.
584A-SB4B. Principles of Chemical Engineering (3-3)
(Same course as Chemistry 500A-500B.)
Prerequisite: Credit or concurrent registration in Mechanical Engineering 350 or Chemistry 310A or 410A.
Industrial stoichiometry; fluid flow and heat transfer as applied to unit operations such as evaporation, distillation, extraction, filtration, gas-phase mass transfer, drying, and others. Problems, reports, and field trips.
586. Solar Energy Conversion (3)
Prerequisites: Engineering Mechanics 340, Mechanical Engineering 450 and 470.
Application of thermodynamics, fluid mechanics and heat transfer to the thermal design of solar energy conversion systems. Computer simulations utilized.
596. Advanced Mechanical Engineering Topics (1-3) I, II
Prerequisites: Consent of instructor.
Modern developments in mechanical engineering. See Class Schedule for specific content. Maximum credit six units for any combination of Mechanical Engineering 496, 499 and 596.

GRADUATE COURSES IN MECHANICAL ENGINEERING
Refer to the Graduate Bulletin.

English
In the College of Arts and Letters

Faculty
Emeritus: Adams, J., Burnett, Chater, Gulick, Haskell, Ingham, Kennedy, Marchand, O'Reilly, Phillips, Redding, M., Sanderlin, Sandstrom, Souse, Sullivan, Theobald, Tunberg
Chair: McLeod
Associate Professors: Borkat, Brown, Butler, Gervais, Jaffe, Kohler, Nichols, Redding, R., Taylor, Wall
Assistant Professors: Aninger, Boe, Covino, Griswold, Kohler, Werner, Wheeler
Lecturer: Little

Offered by the Department of English and Comparative Literature
Master of Arts degree in English.
Major in English with the A.B. degree in liberal arts and sciences.
Teaching major in English for the single subject teaching credential.
Minor in English.
Certificate in Children's Literature.
Certificate in Technical and Scientific Writing.
Courses in comparative literature. (Refer to this section of the catalog under Comparative Literature.)

Advising
All College of Arts and Letters majors are urged to consult with their department adviser as soon as possible; they are required to meet with their department adviser within the first two semesters after declaration or change of major.

English Major
With the A.B. Degree in Liberal Arts and Sciences
All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements." No more than 48 units in English and comparative literature courses can apply to the degree.
A minor is not required with this major.

Preparation for the major.
English 100, 260A, 260B (unless replaced by 560A-560B), and six units selected from English 200, 220, 250A, 250B, 280, 281, 296, Comparative Literature 200, 210, 270A, 270B. (15 units.)

Foreign Language Requirement.
Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Refer to section of catalog on "Graduation Requirements."

Upper Division Writing Requirement.
English 500W, 508W, 581W, or 582W, with a grade of C (2.0) or better.

Major.
A minimum of 27 upper division units in English selected with the approval of the adviser, to include (a) English 533; (b) at least nine units in one of the areas of study listed below; and (c) at least three units in British Literature before 1800, three units in British Literature after 1800, three units in American Literature (English 526, 527, 528, as well as courses listed in the American Literature area of study), and three units in writing (English 500W, 508W, 580, 581W, 582W, 589).

Students who have not taken 260A as part of the preparation for the major must take 560A. Students who have not taken 260B must take 560B. The same course may be used to satisfy requirements under both (b) and (c), except that 560A or 560B may not be used to satisfy requirement (c) without special permission from the Department Chair. No more than six units of courses in comparative literature may be included as part of the major in English.
Areas of Study:
American Literature: English 521, 522, 523, 524 and 525.

Creative Writing: English 570, 571, 572, 573, 579, 580, 581W, 582W, and 589.
NOTE: In addition to the courses listed above, appropriate sections of English 496, 499, 524, 526, 544A, 544B, and selected comparative literature courses may be used to satisfy the requirements for the major if approved by the departmental adviser.

Selection of Courses
Prospective majors of sophomore standing may, with the consent of the course instructor and subject to general university regulations (see "Credit for Upper Division Courses." in the section of this catalog on General Regulations), substitute six units of upper division electives and subject 10 general university regulations (see "Credit for Upper Division Courses" in the catalog for the current academic year) and approved sections of special topics courses.

Addie Van Orden

The requirements for the Secondary Credential in English are as follows:

I. A major in English, comparative literature, or linguistics for the B.A. degree.
II. Foreign Language Requirement: Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Refer to section of catalog on "Graduation Requirements."
III. Upper Division Writing Requirement. English 500W, 508W, 581W, or 582W, with a grade of C (2.0) or better.
IV. Satisfactory completion of 39 units selected from courses in the following categories: (Many of these courses may also be used to satisfy requirements for the major.)

A. Courses in Literature (total 15 units)
   1. Lower division survey: 6 units.
      (American, British, or World)
      a. Particularly appropriate: English 250A, 250B, 260A, Comparative Literature 270A.
      b. Appropriate: English 260B, Comparative Literature 270B. (English 560A-560B may be substituted for 260A-260B.)
   2. Shakespeare or The Bible as Literature: 3 units.
      a. Particularly appropriate: English 533 (Shakespeare).
      b. Appropriate: Comparative Literature or English 405 (The Bible as Literature).
   3. Modern Literature: 3 units.
      a. Particularly appropriate: English 524, 525, 544A, 544B. Comparative Literature 514.
      c. The following courses are also applicable when the topic deals with the Twentieth Century: English 496, 526, 528, 549. Comparative Literature 490, 550, 577.

The major for the Single Subject Teaching Credential has been submitted to the Commission on Teacher Credentialing. Consult department to verify current program requirements.

IV. Satisfactory completion of 39 units selected from courses in the following categories: (Many courses selected with the approval of the departmental adviser.

III. Upper Division Writing Requirement. English 500W, 508W, 581W, or 582W, with a grade of C (2.0) or better.
IV. Satisfactory completion of 39 units selected from courses in the following categories: (Many of these courses may also be used to satisfy requirements for the major.)

   A. Courses in Literature (total 15 units)
      1. Lower division survey: 6 units.
         (American, British, or World)
         a. Particularly appropriate: English 250A, 250B, 260A, Comparative Literature 270A.
         b. Appropriate: English 260B, Comparative Literature 270B. (English 560A-560B may be substituted for 260A-260B.)
      2. Shakespeare or The Bible as Literature: 3 units.
         a. Particularly appropriate: English 533 (Shakespeare).
         b. Appropriate: Comparative Literature or English 405 (The Bible as Literature).
      3. Modern Literature: 3 units.
         a. Particularly appropriate: English 524, 525, 544A, 544B. Comparative Literature 514.
         c. The following courses are also applicable when the topic deals with the Twentieth Century: English 496, 526, 528, 549. Comparative Literature 490, 550, 577.

   B. Courses in Writing (total 12 units)
      c. Writing courses taken in other departments may apply towards this requirement if approved by the departmental adviser (English).

   C. Courses in Linguistics (total 9 units)
      a. Particularly appropriate: Linguistics 410 (History of English), 420 (Modern English) or 520 (Structure of English), 450 (Introduction to Teaching English as a Second Language), 524 (American Dialectology).
      b. Appropriate: Linguistics 101 (Introductory Linguistics), 550 (Theory and Practice of English as a Second Language), 551 (Sociolinguistics), 552 (Psycholinguistics), Comparative Literature 561 (Literary Uses of Languages).

   D. Speech (total 3 units)
      a. Particularly appropriate: Speech Communication 103 (Oral Communication), 105 (Intro. to Speech Communication), 111A (Fund. of Interpretation).
      b. Appropriate: Speech Communication 391 (Group Communication).

   Course Sequences

   All year courses in English may be taken in either semester, and either semester may be taken singly for credit.

   Student Initiated Courses

   Students may petition for a course which falls within the competency of the English Department but which is not among the regular course offerings for the present or following semester. Petition forms may be obtained from the department secretary.

   Undergraduate Seminars

   Each semester, if adequate staffing permits, the department may offer several of its courses as special, limited-enrollment seminars. These seminars are designed to give English majors (or anyone who has the consent of the instructor) the opportunity as Juniors and seniors to engage in advanced work in small discussion groups.

   English Minor

   The minor in English consists of a minimum of 15 units. 12 units of which must be in upper division courses. The department offers minors specifically tailored to complement students majors. All minors will include English 220 (unless a substitution is approved by the departmental adviser) and 12 upper division units selected from one of the following areas, dependent upon the student's major.

   Social Science disciplines, one course from each group:
   1. A course in Shakespeare: English 302 or 533.
   2. A course in expository writing: English 304W, 306W or 500W.
   3. A course in folk or popular literature: English 301, 306A, 405, 491, 492, 501. Comparative Literature 470, or approved sections of other special topics courses.
   4. A course in contemporary literature: English 525, 544B, or approved sections of special topics courses.

   Fine Arts disciplines, one course from each group:
   1. A course in Shakespeare: English 302 or 533.
   3. A course in literature and other arts: English 493, Comparative Literature 495, 595, or approved sections of special topics courses.
   4. A course in creative writing or appropriate special topics: English 580, 581W, 582W, or approved sections of special topics courses.
Business disciplines, one course from each group:
1. A course in expository writing: English 304W, 306W or 500W.
2. A course in Shakespeare, literature and psychology, or popular literature: English 301, 302, 491, 492, 493, 494, 533.
3. A course in American literature: English 521, 522, 523, 524, 525, approved sections of 526 or 528.

Humanities disciplines, one course from each group:
1. A course in Shakespeare: English 302 or 533.
4. A second course in literary history or a course in literature and other disciplines, English 493, Comparative Literature 495, 595, or approved sections of special topics courses.

Science disciplines, one course from each group:
1. A course in technical writing: English 304W.
2. A course in Shakespeare or Bible as Literature: English 302, 405, 533.
3. A course in literature and psychology or popular literature or science fiction: English 301, 306W, 491, 492, 493, 494, 501, approved sections of other special topics courses.
4. A course in literary history: English 560A, 560B, any course in the 520, 530, or 540 series, Comparative Literature 610, 511, 512, 513, 514.

Certificate in Children's Literature
This certificate attests that the student has successfully completed 18 units (minimum GPA 3.0) of planned, advised, coherent, and articulated study in the field of literature for children. Prerequisites include admission to the University and to upper division or graduate standing. The Certificate in Children's Literature may be earned with a specialization either in Education or in English and Comparative Literature.

Specialization in Education. Nine units from courses in group A, six units from group B, and three units of an appropriate elective chosen with the approval of a faculty adviser. Specialization in English and Comparative Literature. Nine units from courses in group A, six units from group B, and three units of an appropriate elective chosen with the approval of a faculty adviser.


Group B, English and Comparative Literature: Comparative Literature 561 (when offered as American Children's Literature), English 496*, 501, 525*, 549.

*With adviser's permission when the subject is closely related to children's literature.

Certificate in Technical and Scientific Writing
The purpose of this certificate program is to prepare students for careers in technical and scientific writing. The program is designed for people who are working on degrees in nontechnical, technical, and scientific fields. It also provides a self-improvement opportunity for people seeking employment, promotion, or upward mobility on the job who are not enrolled in degree programs. Students will complete a total of 21 units that must be approved by the Director of the program in the Department of English and Comparative Literature.
280. Introduction to Creative Writing (3)
Prerequisite: Completion of English Placement Test and Writing Competency requirements and satisfactory completion of English 100 or Afro-American Studies 120 or Linguistics 100 or Mexican-American Studies 111B. PROOF OF COMPLETION OF COURSE AND COMPETENCY PREREQUISITES REQUIRED. Students must bring evidence (grade slip or copy of student record) to first class meeting.
Introduction to theory and practice of creative writing in the major genres, with emphasis on basic concepts and techniques.

281. Creative Writing: Selected Genres (3)
Prerequisite: English 280. Guidance and extensive practice in writing in one or more of the major genres: poetry, drama, fiction, or the essay. See Class Schedule for specific content.

296. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor’s degree.

Comparative Literature (See this section of catalog under Comparative Literature)

UPPER DIVISION COURSES
(Intended for Undergraduates)

301. The Psychological Novel (3)
Psychological novel from its inception to present, including major works from a variety of cultures. Readings designed to aid students in discovering insights which great novelists have unearthed in their explorations of the human psyche.

302. Introducing Shakespeare (3)
Representative tragedies, comedies, and histories. Primarily for the general student not specializing in English or comparative literature. This course does not count toward the English or comparative literature majors. Majors are required to take English 533.

304W. Technical Writing (3)
Prerequisite: English 200. Expository and report writing on technical subjects dealt with in such professions as industry, science, and government. Primarily for students in engineering, nursing, the sciences, and such preprofessional areas as law and medicine. Long and short forms including reports, proposals, manuals, and journal articles. Satisfies University upper division writing requirement for students who have completed 60 units, fulfilled the Writing Competency Requirement, and completed the General Education requirement in Written Communication.

306W. Writing Proficiency (3)
International students are advised to take Linguistics 305W.
Prerequisite: Satisfactory completion of the Writing Competency requirement, the General Education writing requirement or advanced placement. Advanced expository writing intended for students not majoring in English or comparative literature. While the course emphasizes style and the development of ideas, students are expected to review grammar, usage, punctuation, and the like, and to pass a mastery test on these topics. This test is required for course credit. Satisfies University upper division writing requirement for students who have completed 60 units, fulfilled the Writing Competency requirement, and completed the General Education requirement in Written Communication. See Class Schedule for specific content. It is strongly recommended that course be taken at beginning of junior year so that students can apply writing proficiency in upper division courses.

306A-306W. Children’s Literature and Advanced Composition (3-3) I, II
Prerequisite: English 200. English 306A and 306W must be taken concurrently.
306A: Reading, analysis, and discussion of classic works of children’s literature. 306W: Advanced composition, improvement of student skills through writing assignments based upon reading and work in the lecture part. Primarily designed to meet Upper Division Writing and Literature requirements for Liberal Studies Options 2 and 3, but also open to students with other majors. Satisfies University upper division writing requirement for students who have completed 60 units, fulfilled the Writing Competency requirement, and completed the General Education requirement in Written Communication.

405. The Bible as Literature (3) I, II
(Same course as Comparative Literature 405.) Biblical and poetry of the King James version. (Formerly numbered English 505.)

490. Workshop in Alternative Publishing (3)
History and analysis of various aspects of alternative publishing as an avenue of creative expression for literary artists. Practice in applying creative writing and literary critical criteria to a small, noncommercial publication, such as a literary magazine or small book.

491. Contemporary Topics in Literature (3)
Explores writers, works and topics in fiction, poetry, drama, and film, emphasizing the relationship between literature and current concerns. Topics include The City in Fiction and Film, Literature and Identity, Literature of Death, Literature of Contemporary Myth and Folklore, Women in Literature. Primarily for the general student not specializing in English or comparative literature. May count only as an elective course toward the English major. May be repeated with new title and content. Maximum credit six units. See Class Schedule for specific content.

492. Studies in Popular Literature (3)
Study of individual works or types of literature outside of traditional academic areas of interest that have demonstrated popular appeal, with emphasis on how such literature should be critically appreciated and what such literature reveals about the culture that consumes it. Topics include Detective Fiction, Science Fiction and Fantasy, Rogues Literature. Primarily for the general student not specializing in English or comparative literature. May count only as an elective course toward the English major. May be repeated with new title and content. Maximum credit six units. See Class Schedule for specific content.

493. Literature and Film (3)
Relationships between film and genres of literature, focusing on a critical comparison of the techniques of rhetoric, fiction, and drama and those of film. Topics include Literature and Film, Novel into Film, Drama and Film, Reading Film. Primarily for the general student not specializing in English or comparative literature. May count only as an elective course toward the English major. May be repeated with new title and content. Maximum credit six units.

494. Modern American Fiction (3)
Representative works by twentieth century American authors such as Hemingway, Steinbeck, Faulkner, Fitzgerald, Bellow, Vonnegut, Heller, others. Primarily for the general student not specializing in English or comparative literature. May count toward the English major only as an elective course toward the English major. May be repeated with new title and content. Maximum credit six units.

496. Selected Topics in English (1-4) I, II
Specialized study of a selected topic in literature. May be repeated with new title and content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor’s degree. Maximum credit six units.

499. Special Study (1-3) I, II
Prerequisites: Consent of instructor and approval of department chair. Individual study. Maximum credit six units.
UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

All 500-level courses — Strongly recommended: Six lower division units in courses in literature and/or creative writing.

500W. Advanced Composition (3) I, II
The theory and practice of expository writing, including the contributions of semantics, rhetoric, and logic. Satisfies University upper division writing requirement for students who have completed 60 units, fulfills the Writing Competency requirement, and completed the General Education requirement in Written Communication.

501. Literature for Children (3)

507. The History of Literary Criticism (3)
Principles and practices of literary criticism from Greek times to the twentieth century.

508W. The Writing of Criticism (3)
Theory and practice of literary criticism. Emphasis on the work of important critics and on development of student's own critical writing. Satisfies University upper division writing requirement for students who have completed 60 units, fulfills the Writing Competency requirement, and completed the General Education requirement in Written Communication.

509. Introduction to the Teaching of Composition (3) I
Prerequisite: Consent of instructor based on writing sample and/or test. Techniques for teaching and evaluation of written composition. Provides a theoretical base for these techniques.

521. Early American Literature (3)
Representative works by American writers from the period of America's founding until approximately 1800, likely to include works by Benjamin Franklin, Cotton Mather, Anne Bradstreet, Johnathan Edwards, others.

522. American Literature, 1800 until 1860 (3)
Representative works by American writers from 1800 until 1860, likely to include works by Hawthorne, Melville, Poe, Emerson, Thoreau, Whitman, others.

523. American Literature, 1860 until 1920 (3)
Representative works by American writers from 1860 until 1920; likely to include works by Twain, Henry James, Stephen Crane, Emily Dickinson, Carl Sandburg, Kate Chopin, others.

524. American Literature, 1920 until 1950 (3)
Representative works by American writers from 1920 until 1950; likely to include works by Hemingway, Faulkner, Fitzgerald, T.S. Eliot, Ezra Pound, Eugene O'Neill, Steinbeck, others.

525. American Literature, 1950 until Present (3)
American writers from 1950 until the present; likely to include works by Joseph Heller, Saul Bellow, Norman Mailer, Edward Albee, Kurt Vonnegut, Allen Ginsburg, Sylvia Plath, others.

526. Topics in American Literature (3)
Topics in American literature to include The Literature of the South; Black Writers in America; The Frontier and American Literature; The Outcast in American Literature. May be repeated with new title and content. See Class Schedule for specific content. Maximum credit six units.

527. Genre Studies in American Literature (3)
Study of a specific literary genre; overview of the genre's development in American literature (The American Novel; The American Short Story; American Poetry) or focus on a narrower period (The Modern American Novel; The Contemporary American Novel; American Autobiographies; others). May be repeated with new title and content. See Class Schedule for specific content. Maximum credit six units.

528. Individual American Authors (3)
Works of a major American author or, if useful comparisons and juxtapositions warrant it, the works of two or three authors: Melville, Twain, James, Faulkner, Steinbeck, Nabokov, or Pound and Eliot; Emerson and Thoreau; Vonnegut and Barth. Others. See Class Schedule for specific content. May be repeated with new title and content. Maximum credit six units.

530. Chaucer (3) I, II
Chaucer's works, with emphasis on The Canterbury Tales and Troilus and Criseyde.

531. Renaissance Literature (3)
English poetry and prose from 1485 to 1603.

533. Shakespeare (3) I, II
An introduction to the writings of Shakespeare.

534. Study of Shakespeare (3)
Prerequisite: English 533
Advanced study of Shakespeare's achievement as a poet and playwright.

536. Seventeenth Century Literature (3)
English poetry and prose from 1603 to 1660.

537. Milton (3)
Milton's works, with emphasis on Paradise Lost.

538A-538B. Restoration and Eighteenth Century Literature (3-3) I, II
Movement in contemporary English fiction, and the like. May be repeated with new title and content. See Class Schedule for specific content. Maximum credit six units.

540A-540B. English Fiction (3-3)

541A-541B. English Drama (3-3)
Modern British drama from its beginnings to the nineteenth century. Semester I: The period from the beginning to 1842. Semester II: The period following the reopening of the theatres in 1660.

542A-542B. Nineteenth Century British Poetry (3-3)

544A-544B. Modern British Fiction (3-3)
Semester I: English fiction from 1890 to World War II. Semester II: English fiction from 1938 to the present.

545. Modern British Poetry (3)
British poetry since 1900.

546. Modern British Drama (3)
British drama since 1890.

549. Topics in English Literature (3) I, II
The Works of Spenser, The Metaphysical School of Poetry, The English Satirists, Major Movements in contemporary English fiction, and the like. May be repeated with new title and content. See Class Schedule for specific content. Maximum credit six units.

550A-550B. History of English Literature (3-3) I, II
Survey of major English writers, with emphasis on reading of complete works. Semester I: From the beginning to the neoclassical period. Semester II: Begins with the Romantic writers. Especially appropriate for those students who have not satisfied the lower division survey requirements; for those who will teach English literature, and for those proceeding on to graduate study.

557. Techniques of Poetry (3) I, II
A study of the critical and theoretical literature of poetry, from the creative writer's viewpoint, together with reading and discussion of appropriate examples.

557. Techniques of the Short Story (3) I, II
A study of the critical and theoretical literature of the short story from the creative writer's viewpoint, together with reading and discussion of appropriate examples. (Formerly numbered English 571A.)

557. Techniques of Drama (3)
A study of the critical and theoretical literature of drama from the creative writer's viewpoint, together with reading and discussion of appropriate examples. (Formerly numbered English 571B.)
579. Topics in Techniques of Writing (3)
A study of the critical and theoretical literature of literary technique or topic such as satire, science fiction, myth and fantasy, children's literature, the long poem, the literary anatomy, etc. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units.

580. The Writing of Poetry (3) I, II
Prerequisite: English 280.
A writing workshop in poetry. May be repeated with new content. Maximum credit six units.

581W. The Writing of Fiction (3) I, II
Prerequisite: English 280.
A writing workshop in fiction. Satisfies University upper division writing requirement for students who have completed 60 units, fulfilled the Writing Competency requirement, and completed the General Education requirement in Written Communication. May be repeated with new content. Maximum credit six units.

582W. The Writing of Nonfiction (3)
Prerequisite: English 280.
A writing workshop in nonfictional prose. Satisfies University upper division writing requirement for students who have completed 60 units, fulfilled the Writing Competency requirement, and completed the General Education requirement in Written Communication. May be repeated with new content. Maximum credit six units.

589. Senior Workshop in Creative Writing (3)
An advanced workshop intended only for students who have an extensive background in creative writing. Different sections of the course may treat advanced poetry writing, advanced fiction writing, or other special topics. See Class Schedule for specific content.

Comparative Literature
(See this section of catalog under Comparative Literature.)

GRADUATE COURSES
Refer to the Graduate Bulletin.

Family Studies and Consumer Sciences
In the College of Professional Studies and Fine Arts

The undergraduate majors in child development, foods and nutrition, and home economics are accredited by the Council for Professional Development of the American Home Economics Association.

Faculty
Emeritus: Boggs, Cannon, Comin, Dorris, Martin, M., Milne, Somerville, Stout, Warmer
Director: Cooke
Professors: Cooke, Deutsch, Fulcomer, Gunning, Hewes, Josephson
Associate Professors: Balikewell, Hawking, Koblinsky, Martin, K.J., Null, Price, Ross, Spindler
Assistant Professors: Dickerson, Hoover-Plow, Mikita, Schopp
Lecturers: Avery, Gabriel, Harrington, Hill, Jarvenpa, Mello, Robasciotti, Whitney

Offered by the School of Family Studies and Consumer Sciences

Master of Science degree in home economics
Master of Science degree in nutritional sciences
Major in child development with the B.S. degree in applied arts and sciences.
Major in foods and nutrition with the B.S. degree in applied arts and sciences.
Major in home economics with the A.B. degree in applied arts and sciences.
Teaching major in home economics for the single subject teaching credential.
Minor in child development.
Minor in home economics.

Child Development Major

With the B.S. Degree in Applied Arts and Sciences

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements." A minor is not required with this major.

The child development major is a professional field which merges theory with practical application. Many fields of study, including psychology, biology, home economics, sociology, and anthropology, contribute to this interdisciplinary major.

Graduates with a major in child development may work professionally in nursery schools and day care centers, in juvenile homes or in family support and health agencies. Some, after passing the National Teachers Examination, take courses leading to teaching credentials. Others use the human relationships emphasis as the basis for occupations in business and finance. Many go into graduate programs in law, social work, sociology, home economics, marriage and family counseling, or college teaching.

Preparation for the major: Anthropology, 102; Biology, 100, 145; Family Studies and Consumer Sciences 107, 135, 151 or 240, 270, 271; Psychology 101, 293; Sociology 101, 201 or Psychology 270. (36 units.)

Upper Division Writing Requirement. Passing the University Writing Examination or competing one of the approved writing courses with a grade of C (2.0) or better.

Major: A minimum of 37 upper division units to include Family Studies and Consumer Sciences 335, 375, 376L (one unit), 422, and 479; Psychology 350; Sociology 440 or Psychology 340; and 18 units selected with the approval of the adviser, at least 12 and not more than 15 units of which must be in an area in which the student wishes to specialize. A master plan for each student must be filed with the Evaluations Office.

Foods and Nutrition Major

With the B.S. Degree in Applied Arts and Sciences

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements." A minor is not required with this major.

European Studies

In the College of Arts and Letters

European Studies courses, the European Studies major with the A.B. in liberal arts and sciences, and the European Studies minor are offered and administered through the Humanities Committee, composed of faculty members from diverse departments. Professor Leon Rosenstein is director of the European Studies Program and adviser to European Studies majors. Refer to the "Humanities" listing.
This major is planned for students interested in qualifying professionally for diverse careers in the fields of dietetics, food service management, and food industries. Under faculty direction, students can select course sequences which best suit their career goals. Students can fulfill academic requirements for admission to dietetic internships and/or graduate schools which further qualify them for membership in the American Dietetic Association and registration as a dietitian.

Professional careers in dietetics include administrative, therapeutic, teaching, research, and public service positions in hospitals, schools, clinics, and other institutions. Graduates may also qualify for careers as food service managers in private and public organizations and institutions or as technical specialists within food companies, private or governmental agencies, and laboratories, military service, and the mass media.

Preparation for the major. Family Studies and Consumer Sciences 204, 205A, 205B, 240, 270, Accountancy 210A or 212; Biology 100, 100L, Chemistry 100 (or 200 and 201), 130 (or 230), 160 (except with 200 series); Economics 101, 201 (or Mathematics 250); Microbiology 210 (or 310); Physics 107; Psychology 101; Sociology 101. (A three-unit computer related course, e.g., Mathematics 107, Information Systems 180, is needed if Family Studies and Consumer Sciences 507 is not selected in the major.) (51-60 units.)

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 40 upper division units to include Family Studies and Consumer Sciences 301, 302, 303, 304, 404, 405, 406, 421 or 422; Biology 362 and 462L; the remaining units selected with the approval of adviser from Accountancy 315; Family Studies and Consumer Sciences 308, 309, 407, 480, 482, 507, 508, 510; Biology 380; Chemistry 311A, 311B, 467 or 507; Health Science 470, and Management 350, 351 or 352 or Psychology 321.

Home Economics Major

With the A.B. Degree in Applied Arts and Sciences

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on “Graduation Requirements.”

A minor is not required with this major.

The home economics major provides a background appropriate for a wide variety of professional careers. Graduates from the teaching credential program are employed in elementary, secondary, vocational, and adult education fields and in cooperative extension. Clothing, textile, and merchandising careers require positions in retail, marketing, textile research, and as consultants. Graduates from the consumer services and housing sequences have competencies to enter the consumer affairs and family finance fields or use their management skills in working with the elderly, the handicapped, or the low-income. Graduates interested in housing professions find employment in business, educational and governmental organizations.

Preparation for the major. Family Studies and Consumer Sciences 107, 135, 151, 219, 240, 245, 270; Art 157; Economics 100 or 101 or 102; Psychology 101; Sociology 101; (Family Studies and Consumer Sciences 115, competency examination or 115L, 217, 260, Biology 100, 100L, Chemistry 101, 120 required for clothing, textiles and merchandising; Accountancy 210A or 212 required for students in merchandising, Natural Science 110A, 110B; Biology 130; Economics 201 required for consumer services and housing.) (48-58 units.)

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 39 upper division units selected from one of the core professional sequences. A master plan for each student must be filed with the Evaluations Office.

Core Professional Sequences.


Consumer Services and Housing: Family Studies and Consumer Sciences 343, 383, 422, 440, 451, 541, 546, 553. General option: 15 units selected from Family Studies and Consumer Sciences 344, 345, 446, 482, 545. Art 453; Finance 437; Geography 354; Marketing 370; Physics 301; Public Administration 320; Sociology 424. (The prerequisites for Art 453 and Geography 354 have been waived.) Minor option: Related minor with consent of adviser.

Home Economics Major*

For the Single Subject Teaching Credential

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the College of Education.

The major may be used by students in teacher education as an undergraduate major for the A.B. degree in applied arts and sciences.

Preparation for the major. Family Studies and Consumer Sciences 115, 115L, 135, 151, 204, 205A, 205B, 219, 240, 245, 270; Art 157; Biology 100, 100L, Chemistry 100, 130; Economics 100, 101, or 102; Psychology 101; Sociology 101. (53 units.)

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 36 upper division units in Family Studies and Consumer Sciences to include 314, 336, 376, 376L, (prerequisite 271 waived), 383, 422, 440, 451, 481, 483, 541, 584.

The major for the Single Subject Teaching Credential has been submitted to the Commission on Teacher Credentialing. Consult department to verify current program requirements.

Child Development Minor

The minor in child development consists of a minimum of 18 units to include Family Studies and Consumer Sciences 270*, 271; and twelve units selected from Family Studies and Consumer Sciences 375L, 375L, 476*, 477, 478, 570*, 576, 579, Psychology 432*.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

* Indicates course with prerequisites not included in list of courses acceptable for minor.

Home Economics Minor

The minor in home economics consists of a minimum of 18 to 21 units in family studies and consumer sciences, 12 units of which must be in upper division courses. The 18 to 21 units must be selected from one of the following areas:

Foods and Nutrition: Family Studies and Consumer Sciences 204*, 205A*, 205B, and 12 units selected from 301*, 302*, 303, 404, 405, 406, 480, 507, 508, 510 (and/or 596 if appropriate).

Consumer Services: Family Studies and Consumer Sciences 240, 350, and 12 units selected from Family Studies and Consumer Sciences 343*, 440, 541, 545* (and/or 596 if appropriate).

Child Development: Family Studies and Consumer Sciences 135, 270*, 271, and 12 units selected from Family Studies and Consumer Sciences 335, 375, 375L, 436*, 440*, 478, 536*, 570 (and/or 596 if appropriate).

Clothing, Textiles and Fashion Merchandising: Family Studies and Consumer Sciences 217, 219, 260, 361, 462, 520 (and/or 596 if appropriate).

Housing: Family Studies and Consumer Sciences 245*, 319*, 343*, 345, 446, 545, 546 (and/or 596 if appropriate).

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

* Indicates course with prerequisites not included in requirements listed above.

LOWER DIVISION COURSES

107. Nutrition Today (3) I, II

Obtaining nutritional needs from a varied food supply.

Not open to foods and nutrition majors or students with credit in Family Studies and Consumer Sciences 204.
115. Principles of Apparel Construction (3) I, II
Comparative analysis of construction quality, basic theories, techniques, and procedures for apparel construction. Laboratory optional upon passing competency examination.

115L. Apparel Construction Laboratory (1) I, II
Three hours of laboratory. Prerequisite: Credit or concurrent registration in Family Studies and Consumer Sciences 115. Laboratory course in apparel construction techniques. Maximum credit two units.

135. Marriage and Family (3) I, II
Love, maturity, dating, compatibility, conflict as they relate to preparation for successful marriage and family living.

151. Dynamics of Family Management (3) I, II
Value systems and application of principles of decision making to individual, professional and family management in changing socioeconomic environments.

202. Nutrition for Athletes (3)
Prerequisite recommended: Family Studies and Consumer Sciences 107. Review of basic diet which will provide nutritional adequacy. Analysis of current theories and practices related to nutrition and athletic performance. (Formerly numbered Family Studies and Consumer Sciences 105.)

204. Fundamentals of Nutrition (3) I, II
Prerequisites: Biology 100, 100L; Chemistry 100 and 130, or 200 and 201. Nutrition as applied to the stages of the normal life cycle.

205A. Foods I (3) I, II
One hour lecture and six hours of laboratory. Prerequisites: Chemistry 100 and 130. Introduction to composition, properties and quality attributes of foods, methods of preparation, consumer evaluation, and basic sanitation are stressed.

205B. Foods II (3) I, II
One hour lecture and six hours of laboratory. Prerequisites: Family Studies and Consumer Sciences 205A and credit or concurrent registration in Family Studies and Consumer Sciences 204. Food legislation, additives, preservation, meal management and international/culural foods are emphasized.

217. Fundamentals of Clothing and Human Behavior (3) I, II
Cultural, social, psychological, physical, and aesthetic factors which affect clothing behavior. (Formerly numbered Family Studies and Consumer Sciences 317.)

219. Consumer Issues in Clothing and Textiles (3) I, II
Consumer decision-making processes and behavior patterns in the consumption of clothing and textiles. Social, political, economic, and technological factors affecting consumption patterns.

240. Family Income Management (3) I, II
Financial problems involved in the effective management of the family resources.

245. Fundamentals of Housing and Interiors (3) I, II
Two lectures and three hours of laboratory. Architectural, functional and aesthetic factors of housing and interiors as related to family needs.

260. Fashion Merchandise Analysis (3) I, II
Prerequisite: Family Studies and Consumer Sciences 217. Introduction to the fashion industry: manufacturing, wholesaling, and retailing of apparel products and household textiles. (Formerly numbered Family Studies and Consumer Sciences 360.)

270. Principles of Child Development (3) I, II
Prerequisites: Psychology 101 and Sociology 101. Study of the child from conception through adolescence, with emphasis on principles of growth and development. Directed observations of children.
309. Eating Disorders and Weight Control (2) Cr/NC
Prerequisite: Upper division standing in foods and nutrition or other majors with consent of instructor.
Obesity and other eating disorders. Reviewing of etiology, incidence, socioeconomic influences, pathogenesis and treatments. Treatment techniques practiced include modification of diet, activity and behavior. Of interest to those wishing to do weight control counseling.

314. Principles of Apparel Design (3) I
One lecture and six hours of laboratory
Prerequisites: Family Studies and Consumer Sciences 115, 115L or competency examination.
Development of techniques in fabric manipulation. Problem-solving strategies in apparel design utilizing fabric draping and master pattern blocks. (Formerly numbered Family Studies and Consumer Sciences 519.)

319. Textiles (3) I
One lecture and six hours of laboratory
Prerequisites: Family Studies and Consumer Sciences 219, Chemistry 100, 130, Fiber, yarn, and fabric construction and finishes as they relate to selection and care of textiles. (Formerly numbered Family Studies and Consumer Sciences 119.)

335. Interaction in Families (3) I, II
Prerequisite: Family Studies and Consumer Sciences 135.
Marriage adjustment and family interaction throughout the life cycle.

343. Home Energy Issues (3)
Two lectures and three hours of laboratory
Prerequisite: Chemistry 130.
Current energy issues and alternatives. Laboratory experience to acquaint students with current research findings. Selection, use, and care of equipment with concern for scarcity of resources.

344. Introduction to Family Housing (3) I
Prerequisites: Psychology 101 and Sociology 101.
Fundamental housing concepts, criteria affecting choice of housing, demographic forces related to demand for housing. National housing dilemma, housing for special needs and elderly, housing alternatives for sheltering of individuals and families.

345. Housing and Interiors: Historical Influences (3) I
Prerequisite recommended: History 105.
Historical influences of structures, interiors and furnishings as they express cultural needs and values. Critical appraisal of aesthetic and functional qualities of historical and contemporary housing environments.

350. Family Resource Management (3)
Efficient management of the home, family cooperation, establishment of goals, and productive use of money, time, and energy for a variety of family lifestyles. Not open to home economics majors, or to students with credit in Family Studies and Consumer Sciences 451.

351. The Nursery School Program (3)
Prerequisites: Family Studies and Consumer Sciences 271; concurrent registration in Family Studies and Consumer Sciences 375L for one unit only.
Methods, materials, program development, and evaluation of current trends in working with young children.

330 / Family Studies and Consumer Sciences

375L. Laboratory Experiences in Nursery School (1-7)
Three hours of laboratory for each unit of credit.
Prerequisites: Family Studies and Consumer Sciences 271; first unit requires concurrent registration in Family Studies and Consumer Sciences 375. Application to take additional units requires prior consent of instructor.
Directed experiences in working with children in child study centers. May be repeated with consent of instructor. Maximum credit seven units. (One unit of Family Studies and Consumer Sciences 570L can substitute for one unit of 375L.)

383. Consumer Information Systems (3) I, II
Prerequisites: Twelve upper division units in family studies and consumer sciences.
Electronic data processing systems and capabilities relative to family studies. Computer applications in household management including family resources, problem solving, and decision-making processes. Professional uses of computer-based information systems which interface with households, agencies, and institutions.

404. Food Systems Management (3) I, II
One lecture and six hours of laboratory
Prerequisite: Family Studies and Consumer Sciences 303.
Managerial functions in food service systems.

405. Experimental Food Science (3) I, II
Three lectures and three hours of laboratory
Prerequisite: Family Studies and Consumer Sciences 301.
Application of principles and methods of physical and sensory evaluation and food component analysis to conventional and fabricated foods; effects of additives and ingredient variations; project studies; data interpretation and report writing.

406. Diet Therapy (4) I, II
Three lectures and three hours of laboratory
Prerequisite: Family Studies and Consumer Sciences 302.
Dietary management of pathological and disabling diseases.

407. Supervised Field Experience in Nutrition Counseling and Education (3) I, II Cr/NC
Two lectures and three hours of laboratory
Prerequisites: Family Studies and Consumer Sciences 302, consent of instructor, and a B average or better in the major field.
Training in general counseling techniques for nutritional assessment. Supervised field experience with various community based nutrition programs.

408. Restaurant Planning and Design (3)
Prerequisite: Family Studies and Consumer Sciences 308.
Analysis and design of restaurant properties. Emphasis on organization, spatial standards, front and back of house, layout and equipment and furnishings.

414. Advanced Apparel Design (3) II
One lecture and six hours of laboratory
Prerequisite: Family Studies and Consumer Sciences 314.
Creation of original designs utilizing fabric draping and master pattern blocks. (Formerly numbered Family Studies and Consumer Sciences 521.)

415. Creative Approach to Functional Clothing (3)
One lecture and six hours of laboratory
Prerequisite: Family Studies and Consumer Sciences 414.
Clothing as it affects the physical and psychological well-being of the individual. Functional aspects of clothing. Problem-solving approach to meet clothing needs of disabled persons and persons in special occupations. (Formerly numbered Family Studies and Consumer Sciences 315.)

421. Professional Issues: Foods and Nutrition (1) I, II
Prerequisites: Six upper division units in family studies and consumer sciences.
Philosophical base of family studies and relations of its specialties to the field as a whole. Not open to students with credit in Family Studies and Consumer Sciences 422.
422. Contemporary Issues in Family Studies and Consumer Sciences (3) I, II
Prerequisite: Six upper division units in family studies and consumer sciences.
Analysis of current and emerging forces and issues having impact on individuals and families served by professionals and programs related to family studies and consumer sciences.

430. Parent-Child Interaction (3) I
Prerequisite: Completion of Foundations section B (Social and Behavioral Sciences) of General Education.
Theories and philosophies of child rearing and development; contemporary strategies for successful parenting. Not open to child development majors or students with credit in Family Studies and Consumer Sciences 335, 478, or 536.

433. The Individual, Family, and Society (3) I, II
Prerequisites: Psychology 101, Sociology 101, Analysis of individual and family needs and the social institutions and agencies which satisfy these needs. Emphasis on relevant social issues. Includes eight to ten hours of field trips to community agencies.

437. Violence in Families (3)
Prerequisite: Family Studies and Consumer Sciences 335.
Abusive interaction in families, physical and emotional. Present conditions, trends, preventive measures and treatment techniques, and organizations analyzed. Theoretical and applied aspects will be studied.

439. Field Experience in Family Studies (3)
One lecture and nine hours of fieldwork.
Prerequisites: All required courses for the Child Development Major and Family Studies and Consumer Sciences 496.
Field experience in family support agencies under joint supervision of agency staff and course instructor; participation in agency staff meetings, individual conferences and class meetings.

440. Financial Strategies (3) I, II
Prerequisite: Family Studies and Consumer Sciences 240.
Financial problems and practices of families with regard to various socioeconomic levels. Family financial counseling techniques. Relationship of the family to economic and political systems.

446. Housing and Interiors: Contemporary Design (3) II
Two lectures and three hours of laboratory.
Prerequisite: Family Studies and Consumer Sciences 245.
Influence of contemporary designers on structure, interiors and furnishings used in planning the total housing environment.

451. Family Management Theory and Analysis (4)
Three lectures and two hours of laboratory.
Prerequisites: Family Studies and Consumer Sciences 151 and 240.
Home management related to cultural and socioeconomic needs of families. Systems management theory as it relates to family life cycle, changing roles, and varied family forms. Practical application and field experience.

452. Fashion Merchandising Seminar (3) II
Prerequisite: Family Studies and Consumer Sciences 260.
Innovative practices in the apparel industry. Individual investigation and report on a research project.

476. Development of Creative Behavior in Young Children (3) I, II
Prerequisite: Family Studies and Consumer Sciences 375.
Examination of creative behavior, philosophical and empirical approaches to experiences designed for use with young children.

477. Administration of Child Development Programs (3) I
Prerequisites: Family Studies and Consumer Sciences 375 and 375L.
Historical and philosophical background of programs for young children; current research, laws and regulations, planning, operating, evaluating child care centers and nursery schools.

478. Working with Parents (3) I, II
Prerequisite: Family Studies and Consumer Sciences 270 or Psychology 330.
An investigation of philosophy, issues, and current trends in working with parents.

480. Demonstration Techniques (3) I, II
Course lecture and six hours of laboratory.
Prerequisite: Six units in family studies and consumer sciences. Recommended: Educational Technology and Librarianship 404 and Speech Communication 204.
Organizing materials and developing techniques used for demonstrations and presentations in business, promotional and educational settings. Preparation of scripts, graphic styling, television productions, and professional demonstrations.

481. Materials and Techniques for Teaching Home Economics (3) II
Two lectures and three hours of laboratory.
Prerequisite: Twelve upper division units in Family Studies and Consumer Sciences. Selecognition, use, and evaluation of instructional materials, teaching strategies and laboratory procedures for home economics education and vocational student organizations. Application and development of individualized instructional products, demonstration materials, and other instructional aids.

482. Educational Practices and Instructional Resources (3) I, II
Prerequisite: Fifteen units in Family Studies and Consumer Sciences.
Principles of learning as they relate to teaching home economics to adults. Organization of material, selection, use and evaluation of teaching techniques.

483. Program Development in Home Economics (4) I
Three lectures and two hours of activity.
Prerequisite: Twelve upper division units in family studies and consumer sciences.
Course development and design, instructional procedures and evaluation strategies for consumer-home economics programs.

495. Internship in Restaurant Management (3) Cr/NC
Prerequisite: Family Studies and Consumer Sciences 308 and consent of restaurant management major adviser.
Students to be assigned to restaurant firms to work under joint supervision of the business firm's management and course instructor.

496. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 496, 498, 596 courses applicable to a bachelor's degree.

499. Special Study (1-3) I, II
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

507. Processing Food and Nutrition Data (3)
One lecture and six hours of laboratory.
Prerequisites: Family Studies and Consumer Sciences 302 and 303.
Application of computer logic to food service management, diet planning and analysis.

508. Advanced Food Systems Management (3)
Prerequisite: Family Studies and Consumer Sciences 404.
Analysis of current topics in food systems management. Application of management principles in individual special projects.

510. Nutrition and Community Health (3)
Two lectures and three hours of laboratory.
Prerequisite: Family Studies and Consumer Sciences 302.
Exploration of nutrition problems in the community with consideration of current and potential means of resolving them.
519. **Textile Analysis and Testing (3)** II
   One lecture and six hours of laboratory.
   Prerequisite: Family Studies and Consumer Sciences 319.

520. **Clothing and Human Behavior (3)** II
   Prerequisites: Family Studies and Consumer Sciences 217, Psychology 101 and Sociology 101.
   Concepts and theories of human behavior as they apply to clothing usage. Significance of impressions of individuals that result from their attire in the dynamics of social interaction of contemporary Western societies.

522. **Clothing and Textiles: Historical Influences (3)** I
   Historical overview of clothing and textiles with emphasis on important socioeconomic and cultural influences.

536. **Family Study (3)**
   Prerequisites: Family Studies and Consumer Sciences 335 and Sociology 101.
   Dynamics of family living; attitudes, practices, social and psychological interaction and family life patterns in different cultures, social classes and ethnic groups.

539. **Family Relationships in Literature (3)**
   Insights through creative literature into the variations in relationships between the sexes and between generations in various cultures and subcultures. Fiction viewed as social documents which reveal changing expectations and ways of coping with stress.

541. **Consumer Interest (3)** II
   Prerequisite: Family Studies and Consumer Sciences 240 or 440.
   Analysis of consumer legislation, consumer information and consumer protection programs.

545. **Family Housing (3)** II
   Two lectures and three hours of laboratory.
   Prerequisite: Family Studies and Consumer Sciences 245.
   Advanced housing problems at various stages of the family life cycle and the different socioeconomic levels.

546. **Environmental Factors of Housing (3)** I
   Prerequisite: Family Studies and Consumer Sciences 245.
   Problems of developing effective housing for families in various cultural situations. Investigation of sociopsychological, economic and legislative factors of housing.

553. **Supervised Field Work in Home Management (3)**
   One lecture and six hours of laboratory.
   Prerequisites: Family Studies and Consumer Sciences 271, 451, 536.
   Management and social problems as they relate to the home and family. Supervised field work with various community agencies and selected families.

570. **Human Development: Infant/Toddler (2)** I, II
   Prerequisites: Family Studies and Consumer Sciences 270 or Psychology 330, Psychology 260, Biology 350 recommended.
   Physiological, psychological, social and cultural development of the human organism from birth through three years of age.

570L. **Human Development: Infant/Toddler Laboratory (1)** I, II
   Three hours of laboratory.
   Prerequisite: Credit or concurrent registration in Family Studies and Consumer Sciences 570.
   Directed observation and laboratory demonstration with infants and toddlers.

576. **Supervised Experiences with Young Children (3)** I, II
   One lecture and nine hours of field work.
   Prerequisite: Nine units in child development.
   Directed experiences in various community settings. Emphasis on application of child development principles in working with young children. May be repeated with new content. Maximum credit six units.
French
In the College of Arts and Letters

Faculty
Eminent: Ghibert, Max, Messier
Chair: Branan
Professors: Branan, Glasgow, Jackson, Nelson
Associate Professors: Cox, Palmer, Schorr
Assistant Professor: Benkov

Offered by the Department of
French and Italian Languages and Literatures
- Master of Arts degree in French
- Major in French with the A.B. degree in liberal arts and sciences
- Teaching major in French for the single subject teaching credential in foreign languages
- Minor in French

Advising
All College of Arts and Letters majors are urged to consult with their departmental adviser as soon as possible. They are required to meet with their departmental adviser within the first two semesters after declaration or change of major.

French Major
With the A.B. Degree in Liberal Arts and Sciences
All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements." Students majoring in French must complete a minor in another field to be approved by the departmental adviser in French.

Preparation for the major.
- French 100A, 100B, 200A, 200B, 200C, 200D (22 units)
- Recommended: History 105, 106

Foreign Language Requirement.
The foreign language requirement is automatically fulfilled through course work for preparation for the major.

Upper Division Writing Requirement.
- Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.
- Majors. A minimum of 24 upper division units in French to include French 301, 302, 305A-305B, 401 or 411 or 431, and nine units of upper division courses in the language.

French Major*
For the Single Subject Teaching Credential in Foreign Languages
All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the College of Education. This major may be used by students in teacher education as an undergraduate major for the A.B. degree in liberal arts and sciences. A minor in another field approved by the departmental adviser in French is required for a major.

Preparation for the major.
French 100A, 100B, 200A, 200B, 200C, 200D (22 units)

Foreign Language Requirement.
The foreign language requirement is automatically fulfilled through course work for preparation for the major.

Upper Division Writing Requirement.
- Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.
- Major. A minimum of 36 upper division units in French to include French 301, 302, 305A-305B, 401, 421, 422, 431, 501, and 561 or 543 or 551.

*The major for the Single Subject Teaching Credential has been submitted to the Commission on Teacher Credentialing. Consult department to verify current program requirements.

French Minor
The minor in French consists of a minimum of 15 units in French; six units of which must be in upper division courses.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

High School Equivalents
High school foreign language courses may be used for purposes of placement in college courses and may be counted toward meeting the foreign language requirement in various majors. These high school courses will not count as college credit toward graduation.

Secondary school language courses can be used as follows:
1. The first two years of high school level language count as the equivalent of the first semester of a college level course, although students with fewer than three years of high school level language may complete the first semester college course for graduation credit.
2. The first three years of high school level language count as the equivalent of the first two college semesters, although students with fewer than four years of high school level language may complete the second semester college course for graduation credit. Students who have completed three years of foreign language in high school will not receive credit for the first semester college course unless at least five years separate the last high school course and the first college course.
3. Four years of high school level language count as the equivalent of three college semesters, thus fulfilling the foreign language requirement.

LOWER DIVISION COURSES
Native speakers of French will not receive credit for taking lower division courses except with advance approval from the department.

All lower division courses in French are taught in French.

No credit will be given when French 100A, 100B, 200A, 200B, 200C, or 200D are taken concurrently or out of sequence. However, French 200A-200B-200C-200D may be taken in any order.

100A. Elementary (5) I, II
- Pronunciation, speaking and writing, readings on French culture and civilization, essentials of grammar. Not open to students who have completed three years of high school French.
- (Numbered French 101 in academic years 1962-63 and 1963-64)

100B. Elementary (5) I, II
-Continuation of French 100A. Not open to students who have completed four years of high school French.
- (Numbered French 102 in academic years 1962-63 and 1963-64)

200A. French Grammar (3) I, II
-Prerequisite: French 100B or two years of high school French.
- Comprehensive survey of French grammar at the intermediate level. Analysis and use of typical French structures.

200B. Reading French (3) I, II
-Prerequisite: French 100B or three years of high school French.
- Emphasis on reading: short stories, plays, cultural material, etc.

200C. Writing French (3) I, II
-Prerequisite: French 100B or three years of high school French.
- Emphasis on written composition: study of a variety of prose models and practice in writing.
UPPER DIVISION COURSES
(Intended for Undergraduates)

All upper division courses in French are taught in French unless otherwise stated. French 301 and French 302 are not open to students who hold a French baccalaureat.

301. Advanced Grammar and Composition (3) I, II
Prerequisite: Twelve units of 200-level French.
Advanced grammar and stylistics, intensive writing practice.

302. Advanced Grammar and Composition (3) I, II
Prerequisite: French 301.
Advanced grammar and stylistics, intensive writing practice.

305A. Survey of French Literature (3) I
Prerequisite: Twelve units of 200-level French.
Important movements, authors, and works in French literature from the Middle Ages to the Enlightenment.

305B. Survey of French Literature (3) II
Prerequisite: Twelve units of 200-level French.
Continuation of French 305A from the Enlightenment to the present.

401. French Phonetics and Diction (3)
Prerequisite: Twelve units of 200-level French.
Study of the sound system of French as a means of improving pronunciation and diction. Phonetic transcription, classroom exercises and laboratory work.

411. Explication de Textes (3)
Prerequisite: Twelve units of 200-level French.
An introduction to the analytical approach to the detailed study of literature. Demonstrations by instructor and students.

421. French Civilization (3)
Prerequisite: Twelve units of 200-level French.
French culture from the earliest times to the Enlightenment, with emphasis on the people, their social and political institutions, their arts and letters. Not open to students with credit in Humanities 310.

422. French Civilization (3)
Prerequisite: Twelve units of 200-level French.
French culture from the Enlightenment to the present. Continuation of French 421. Not open to students with credit in Humanities 311.

431. Applied French Linguistics (3)
Prerequisite: Twelve units of 200-level French.
Phonemics, morphemics, syntax and semantics of present day French.

496. Topics in French Studies (1-4)
Topics in French literature, culture and linguistics. May be repeated with new content. Maximum credit nine units. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Taught in English. See Class Schedule for specific content.

499. Special Study (1-3) I, II
Prerequisites: French 302, 305A, 305B.
Individual study. Maximum credit six units. This course is intended only for students who are currently enrolled in or who already have credit for all upper division courses in French available in any given semester.

UPPER DIVISION COURSES (Also Acceptable for Advanced Degrees)

501. Translation (3)
Prerequisite: French 302.
Stylistic comparison of French and English through translation of a variety of prose styles from English to French and from French to English.

521. Seventeenth Century French Literature (3)
Prerequisite: French 302.
Major seventeenth-century dramatists with emphasis on Corneille, Moliere and Racine.

531. Eighteenth Century French Literature (3)
Prerequisite: French 302.
Major eighteenth-century writers of fiction, with emphasis on Voltaire, Diderot and Rousseau.

541. Nineteenth Century French Novel (3)
Prerequisite: French 302.
Major novelists of the nineteenth century.

543. Modern French Theatre (3)
Prerequisite: French 302.
Major dramatists of modern France.

545. Modern French Poetry (3)
Prerequisite: French 302.
Representative French poets of the modern era.

551. Twentieth Century French Novel (3)
Prerequisite: French 302.
Major novelists of twentieth-century France.

561. Methods in Teaching French as a Second Language (3)
Prerequisite: French 431.
Teaching of French as a second language; contemporary theory and methods. Not open to students with credit or concurrent enrollment in Spanish 561.

596. Topics in French Studies (1-4)
Prerequisite: French 302.
Topics in French language, literature and linguistics. May be repeated with new content. Maximum credit nine units. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Taught in French. See Class Schedule for specific content.

GRADUATE COURSES
Refer to the Graduate Bulletin.
General Studies*

The University offers a number of courses which are not part of a regular departmental curriculum. They provide students with opportunities for achieving academic credit through interdisciplinary and nontraditional course work.

General Courses

LOWER DIVISION COURSES

105. Living in the Information Society (3) I, II
For further information contact the Department of Telecommunications and Film.

200. Selected Activities (1-3) Cr/NC
Prerequisites: Twelve units of college credit and a minimum grade point average of 2.0. Supervised experience in college or community activities.

210. Our Global Future: Values for Survival (3)
For further information contact Dr. Mary E. Clark in the Department of Biology.

220. Observation Practicum in Multidisciplinary Assessment/Remediation (1) I, II
Prerequisites: Sophomore standing is recommended but not required.

275. Honors Special Study (1)
For further information contact the Division of Undergraduate Studies.

UPPER DIVISION COURSES

(Indended for Undergraduates)

300. Honors Course (1-3)
Refer to Honors Program. (Formerly numbered University Studies 300.)

340. Supervised Experience in College and/or Community Activities
Prerequisites: A minimum grade point average of 2.0.

400. Selected Activities (1-3) Cr/NC
Prerequisites: Admission to the University Honors Program.

General Studies courses offered as University Studies courses prior to academic year 1984-85.

Human Services Courses

The College of Human Services sponsors General Studies courses 302 and 502. The purpose of these courses is to provide an opportunity for interdisciplinary study for students entering human service professions. Refer to the Class Schedule for specific content. (Formerly numbered University Studies 302 and University Studies 502 respectively.)

302. Selected Topics in Human Services (1-3) Cr/NC

502. Advanced Topics in Health and Human Services (1-3)

Innovative Courses

General Studies courses (250, 350, 550) are interdisciplinary courses characterized by new methods of teaching and learning. These courses are proposed by faculty or by students acting through a faculty sponsor and may be offered up to four semesters. Questions about individual courses should be directed to the department or departments listed immediately after the General Studies number (250, 350, 550) in the Class Schedule; general inquiries about General Studies courses (250, 350, 550) as a whole should be directed to the chair of the University Curriculum Committee.

Students interested in enrolling in General Studies 250, 350 or 550 should contact the faculty adviser of the department(s) offering the course for further details. (Formerly numbered University Studies 250, University Studies 350, and University Studies 550 respectively)

250. Innovative Approaches to Teaching and Learning (1-6)

350. Innovative Approaches to Teaching and Learning (1-6)

550. Innovative Approaches to Teaching and Learning (1-6)

Liberal Arts Courses

The College of Arts and Letters sponsors General Studies courses 101 and 301 which are interdisciplinary courses. They fall into two main categories: (1) Lecture series on topics of current interest for which the humanities and social sciences bring insight; and (2) Workshops designed to give liberal arts students skills desirable for advancement in their major, but not normally offered by their departments. Students interested in enrolling in General Studies 101 and 301 should contact the faculty adviser of the department(s) offering the course or the College of Arts and Letters Assistant Dean for further details. (Formerly numbered University Studies 101 and University Studies 301 respectively)

101. The Liberal Arts in Today's World (1-3) Cr/NC

301. The Liberal Arts in Today's World (1-3) Cr/NC
Geography

In the College of Arts and Letters

Faculty
Emeritus: Colombo, Eidemiller, Kiewiet de Jonge, Richardson, Storm, Taylor
Chair: Griffin
Professors: Ford, Greenwood, Griffin, Johnson, Keen, O'Brien, Pryde, Quastler, Stutz,
Wright, Yah
Associate Professors: Blick, Fredrich, McArthur
Assistant Professor: Stow
Lecturer: Aguado

Offered by the Department
Master of Arts degree in geography
Major in geography with the A.B. degree in liberal arts and sciences.
Minor in geography.

Advising
All College of Arts and Letters majors are urged to consult with their department adviser as soon as possible, they are required to meet with their department adviser within the first two semesters after declaration or change of major.

Geography Major
With the A.B. Degree in Liberal Arts and Sciences
All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."
Preparation for the major and the major consist of basic requirements in the lower and upper division for all students, plus additional requirements in one of the following areas of specialization:
(a) General Geography
(b) Physical Geography
(c) Resource and Environmental Geography
(d) Transportation and Urban Geography
(e) Applied Geography

Basic Requirements for All Students
Preparation for the major. Geography 101, 101L, 102. (7 units.)
Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Refer to section of catalog on "Graduation Requirements."
Upper Division Writing Requirement. Passing the University Writing Examination or English 304W, 305W, 500W, 508W, 581W, or 582W, with a grade of C (2.0) or better.
Major. A minimum of 26 to 38 upper division units to include Geography 305 (two units), Geography 498A (1 unit), and either Geography 498B (2 units) or at least two additional units in geography other than the major requirements. Students wishing to lake Geography 498B must have an overall GPA of 3.0 and/or the consent of the department.
Graduation with Distinction. A student desiring to graduate with Distinction in Geography must meet the University requirements listed in the section of this catalog on "Graduation Requirements" and, in addition, must have completed Geography 498B by the time of graduation and be recommended by the geography faculty.
In addition to the basic requirements, the student must complete the requirements in one of the following areas:
(a) General Geography
Students selecting this area must complete a minor in another department.
Additional preparation for the major. Geography 103.
Major (continued). Three units from each of the following groups: (a) Geography 320-339, 521-540; (b) 350-365, 555-559; (c) 370-371, 570-576; (d) 378, 401, 501-506; (e) 507-509; (f) 380-381; (g) 382, 585-589. (26 units.)
(b) Physical Geography
Students selecting this area are not required to complete a minor in another department. Elective upper division course work in related disciplines is strongly recommended.
Additional preparation for the major. Geography 103; Mathematics 121 or higher numbered course; Chemistry 200; Physics 180A, 182A.
Major (continued). Fifteen units from Geography 378, 401, 501-509; six units from 382, 581-589, and three units from each of the following groups: (a) 380-381; (b) 320-339, 521-540; (c) 350-371, 555-576. (35 units.)
(c) Resource and Environmental Geography
Students selecting this area are not required to complete a minor in another department.
Additional preparation for the major. Geography 103; Biology 100, 100L.
Major (continued). Geography 370 and 371; three units from each of the following groups: (a) 320-339, 521-540; (b) 350-365, 555-559; (c) 380-381; (d) 382, 581-589. Nine units from 378, 570-576; six units from 401, 501-509. (38 units.)
(d) Transportation and Urban Geography
Students selecting this area are not required to complete a minor in another department.
Additional preparation for the major. Mathematics 107; Economics 102.
Major (continued). Geography 381, 385; twelve units from 353-365, 555-570; six units from 378, 401, 501-509, and three units from each of the following groups: (a) 320-339, 521-540; (b) 370-371, 573-576. (35 units.)
(e) Applied Geography
Students selecting this area are not required to complete a minor in another department.
Additional preparation for the major. Mathematics 107; and a three-unit course in introductory statistics.
Major (continued). Eighteen units from Geography 380-382, 495, 581-589; and three units from each of the following groups: (a) 320-339, 521-540; (b) 350-371, 555-576; (c) 378, 401, 501-506; (d) 507-509. (35 units.)

Geography Minor
The minor in geography consists of a minimum of 18 units of geography to include Geography 101, 102 and one of the following areas:
Physical: nine units selected from Geography 378, 401 or 501-509, and three units selected from techniques courses Geography 380-382, 581-589.
Cultural: six units from Geography 312A or 312B, 380, 351, 356, 357, and six units selected from regional courses Geography 320-339, 521-522.
Urban/Transportation: nine units selected from Geography 353-358, 555-559, and three units selected from either technique or regional courses Geography 320-339, 380-382, 581-589.
Conservation: nine units selected from Geography 370, 371, 378, 570-576, and three units selected from technique courses Geography 380-382, 581-589.
Techniques: nine units selected from Geography 380-382, 581-589, and three units selected from any other upper division course.
Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

Certificate in Cartography
The purpose of the program is to prepare students to carry out different types of mapping activities in public and private organizations.
Students must apply for admission to the program before the completion of 15 certificate units and must complete the required units with a 2.5 grade point average.
The certificate requires 21 units to include six units selected from Civil Engineering 218, Mathematics 107 and 137, and fifteen units selected from Geography 381, 382, 495, 581, 582, 587. Courses with relevant content may be substituted for the courses listed above with the approval of the certificate adviser.

LOWER DIVISION COURSES

101. Introduction to Physical Geography (3) I, II
The nature of maps, weather and climates of the world; natural vegetation; land forms and their associated soils, with reference to their climatic relationships; the seas and their coasts. Related field observations.

101L. Physical Geography Laboratory (1) I, II
Three hours of laboratory. Prerequisite: Credit or concurrent registration in Geography 101.

102. Introduction to Cultural Geography (3) I, II
Introduction to cultural geography, covering the elements of culture, such as technology, race, language, religion, political organization, methods of livelihood, settlement patterns and population, and the regional distribution of these elements over the earth. A maximum of six units will be allowed for Geography 102 and 312A or 312B. Occasional field trips may be arranged.

103. Introduction to Meteorology (3) I, II
The composition, structure, and circulation of the atmosphere, including elementary theory of storms and other weather disturbances. May be followed by or taken with, Geography 103L.

103L. Introduction to Meteorology Laboratory (1) I, II
Three hours of laboratory. Prerequisite: Credit or concurrent registration in Geography 103.

UPPER DIVISION COURSES (intended for Undergraduates)

305. Concepts and Trends in American Geography (2)
Prerequisites: Geography 101 and 102. Major trends, concepts and methods of American geography. Introduction to basic geographic literature and information sources. Emphasis on newly evolving aspects of geography and the dynamic nature of the discipline.

312A-312B. Culture Worlds (3-3)
The evolution, distinguishing cultural characteristics, and physical features of the major cultural regions of the world, with emphasis on the role man has played in the alteration of the natural landscape. Maximum credit of six units will be allowed for Geography 102 and 312A or 312B.

320. California (3) I, II
Prerequisite recommended: Geography 101 or 102. Systematic and regional analysis of the topography, climate, natural vegetation, and their relationships with the past and present activities of man and his use of the land. Offered in summer with a 10-day tour. Maximum credit three units.
A. Lecture course (occasional field trips may be arranged)
B. Fieldwork course

321. United States (3) I, II
Prerequisite recommended: Geography 101 or 102. The natural regions of the United States, their formation and economic and historical development.

322. Canada and Alaska (3) II
Prerequisite recommended: Geography 101 or 102. The physical and historical bases of Canadian and Alaskan regionalism; the economic and strategic importance of these two areas.

323. Middle America (3) I, II
Prerequisite recommended: Geography 101 or 102. The land and peoples of Mexico, Central America, and the islands of the Caribbean: a survey of the resources, economies, and trade of the region. Maximum credit three units.
A. Lecture course (occasional field trips may be arranged)
B. Fieldwork course

324. South America (3) I, II
Prerequisite recommended: Geography 101 or 102. The physical regions and human geography of South America, including the history of colonization and the exploitation of resources.

325. Geography of San Diego County (3) I, II
Prerequisite recommended: Geography 101 or 102. Analysis of the physical and cultural geography of San Diego County. Topics covered will include landforms, climate, population, industry, transportation, and the effects of human activities on the natural environment. Maximum credit three units.
A. Lecture course (occasional field trips may be arranged)
B. Fieldwork course

331. Monsoon Asia (3)
Prerequisite recommended: Geography 101 or 102. Geographic basis for the political heritage, economics, and peoples of China, Japan, Indonesia, India, and other countries of Southern, Southeastern, and Eastern Asia.

335. The Middle East and North Africa (3) I, II
Prerequisite recommended: Geography 101 or 102. The geographic base for the political heritage, economies, religious institutions, and peoples of North Africa and the Middle East.

336. Europe (3)
Prerequisite recommended: Geography 101 or 102. Systematic analysis of the geographic bases of modern European life. Regional investigation of countries of Europe except the Soviet Union.

337. Soviet Union (3)
Prerequisite recommended: Geography 101 or 102. Natural resources, agricultural production, industrial growth, and transportation.

339. Oceania (3)
Prerequisite recommended: Geography 101 or 102. The physical geography, peoples, economies, and trade of Oceania, Australia, and New Zealand.

350. Political Geography (3) I, II
Geography as it relates to the strength of nations and international relations.

351. Economic Geography: Primary Production (3)
Prerequisite recommended: Geography 101 or 102. The geography of agricultural production and the extractive industries in relation to world commerce. Occasional field trips may be arranged.

353. Location of Economic Activity (3) I, II
Prerequisite recommended: Geography 101 or 102. Spatial arrangement and interrelationship of resources, production, exchange and consumption; principles and theory in industrial location; selecting favorable locations for capital investments; determining growth potential of service and market areas, meeting environmental impact requirements.

354. Geography of Cities (3) I, II
Prerequisite recommended: Geography 101 or 102. Survey of the location, function and spread of cities; the spatial and functional arrangement of activities in cities, leading to an analysis of current urban problems: sprawl, city decline, metropolitan transportation. Maximum credit three units.
A. Lecture course (occasional field trips may be arranged)
B. Fieldwork course
356. Social Geography (3)
Prerequisite: Geography 102.
Analysis of sociocultural distributions with emphasis on social regions, spatial behavior and cultural landscapes. Topics include landscape image and design, patterns of folk and ethnic culture and spatial diffusion processes.

357. Historical Geography (3) I, II
Prerequisite: Geography 101 or 102.
Transformation of the natural and cultural landscape with emphasis on the utilization and significance of resources. Exploration, migration, and settlement in relation to geographic phenomena.

358. Transportation Geography (3) I, II
Prerequisite recommended: Geography 101 or 102.
The spatial distribution of transportation networks and commodity movement and their relationship to the distribution of economic activity.

359. Geography of Air Transportation (3) I, II
Prerequisite recommended: Geography 101 or 102.
Evolution, current status, with emphasis on the U.S. and future of commercial air transportation as influenced by government regulations, economic conditions, corporate strategies, and technological change.

360. Geography of Tourism (3)
Distribution and patterns of domestic and international tourism. Background, physical, cultural, and social characteristics, modes of travel, destinations, environmental and cultural impact, problems and future. Occasional field trips.

365. Human Perception: Space and Place (3) I, II
Human perception and spatial behavior in a broad range of physical and cultural settings designed to provide an understanding of key relationships between people and place.

370. Conservation of Environmental Quality (3) I, II
Prerequisite recommended: Geography 101 or 102.
Quality of man's habitat in a changing human and natural environment; water, air and soil pollution, urban crowding, disappearance of open space, and decreasing opportunities for outdoor recreation. Occasional field trips may be arranged.

371. Conservation of Natural Resources (3) I, II
Prerequisite recommended: Geography 101 or 102.
Nature and extent of mineral, soil, water, forest, and wildlife resources and their conservation, with particular emphasis on the United States against a general background of world resources. Conservation philosophies and practices and their geographic bases. Maximum credit six units.
A. Lecture course (occasional field trips may be arranged)
B. Fieldwork course

376. Environmental Physiography (3) I, II
Prerequisite: Geography 101.
Introduction to environmental physiographic dynamics. Assessment of man's role in these dynamics and their effect on urban and rural land use, including such topics as induced erosion, landslides, and flooding.

380. Map Investigation (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Geography 101 or 102.
Use of the map as an analytical tool in geography. History of developments in cartography.

381. Maps and Graphic Methods (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Geography 101 or 102.
The art and science of creating graphs and maps as media for describing and analyzing geographic phenomena. Laboratory instruction and practice in cartographic techniques with emphasis on presenting quantitative data.

382. Use and Interpretation of Aerial Photographs (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Geography 101 and consent of instructor.
Stereoscopic interpretation and cartographic representation of landforms, vegetation, and land use. Emphasis on practical exercises.

401. Physiology (3)
Prerequisite: Geography 101.
Morphology and genetic interpretation of the relief features of the earth's surface.

490. Geographic Internship (3) I, II
Prerequisite: Consent of instructor.
Students will be assigned to various government agencies and industries and will work under the joint supervision of agency heads and the course instructor. Maximum credit six units. Three units may be applied to major in geography.

495. Geographical Internship (3) I, II
Prerequisite: Six units in geography.
Critical analysis of problems within a specific field of the discipline. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum combined credit six units in 496A and 496B.
A. Lecture course (occasional field trips may be arranged)
B. Fieldwork course

498A. Research Design (1) I, II
Prerequisite: Credit of concurrent registration in Geography 305.
How to develop a research topic. Methods of defining research methods, testing hypotheses, surveying literature, assessing data sources, data reduction, and writing research proposals. (Formerly numbered Geography 498.)

498B. Senior Thesis (2) I, II
Prerequisite: Geography 498A; an overall GPA of 3.0 and consent of the department.
Individual research project and written thesis.

499. Special Study (1-3) I, II
Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

501. Advanced Physiography (3)
Prerequisite: Geography 401.
Climatic and structural physiography

504. Coastal and Submarine Physiography (3)
Prerequisite: Geography 378 or 401.
Analysis of marine waves, of their modification in shallow waters, of coastal currents and tides. Interpretation of coastal and submarine relief in relation to environmental processes and their modification by man. Occasional field trips may be arranged.

505. Geography of Soils (3) II
Prerequisite: Geography 101.
The nature, properties and distribution of soils and their relationships to the influence of climates, landforms, and human activity. Occasional field trips may be arranged.

506. Geography of Soils Laboratory (1)
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Geography 505.
Theories of soil genesis, edaphology and structure related to empirical phenomena through laboratory experimentation and observation. Best suited to concurrent enrollment in Geography 505. Occasional field trips may be arranged.
507. Geography of Natural Vegetation (3) I, II
Prerequisite: Geography 102.
The natural vegetation associations of the world, their distribution, classification and development, including relationship to human activities. Maximum credit three units.
A. Lecture course (occasional field trips may be arranged)
B. Fieldwork course

508. Physical Climatology (3) I
Prerequisite: Geography 103.
The causes of climatic types as they occur throughout the world. Principles of several climatic classifications.

509. Regional Climatology (3) II
Prerequisite: Geography 103.
The climates of the world, physical geography, and climate maps. Human ecology and related fields.

510. Urbanization and Modernization in Latin America (3)
Prerequisite: Geography 101, 300 or 324.
Analysis of specific aspects of urbanization and modernization processes in Latin America. Emphasis on changing spatial relationships resulting from rapid urban growth and culture change. Occasional field trips.

511. Historical Geography of Latin America (3) (Offered at IVC only)
Prerequisite: Geography 102, 300 or 324.
Changes in the Latin American cultural landscape over time. The peopling, exploration, settlement and changing geographical patterns of all or a part of the region. Origin and diffusion studies will be stressed.

512. Advanced Regional Geography (3)
Prerequisite: At least one upper division course in the subject region.
Intensive study of a major country or subregion. May be repeated with different course content for a maximum of six units. See Class Schedule for specific content.

513. Historic Preservation and Urban Design (3)
Prerequisite: Geography 102.
Processes of growth and change in cities. Techniques for preserving, renovating, rehabilitating, and recycling valued buildings and neighborhoods. International comparisons of preservation policies and practices and analyses of urban patterns resulting from them. American values and the concept of place.

514. Location and Spatial Structure of Cities (3)
Prerequisite: Geography 350 or 359.
Principles and characteristics of urban growth and settlement; the internal structure and functioning of urban centers; spatial models of urban land use; growth management, transportation problems, and sociopolitical urban problems. Occasional field trips may be arranged.

515. Advanced Transportation Geography (3)
Prerequisite: Geography 358 or 359.
Topics in the spatial analysis of transportation, e.g., spatial interaction patterns, diffusion process, models in spatial analysis. Occasional field trips may be arranged.

516. Urban Transportation Geography (3)
Prerequisite: Three units of upper division urban or transportation course work in geography or related field.
Urban transportation networks and their effects, past, present and future, on the economy and physical structure of the urban region. Occasional field trips may be arranged.

517. Land Use Analysis (3) II
Prerequisite: Geography 370.
Problems of maintaining environmental quality in the process of land conversion from rural to urban uses with emphasis on land capability and suitability studies. Occasional field trips may be arranged.

571. Energy Resources and the Environment (3) I, II
Prerequisite: Geography 371. Recommended: Physics 107 or 301.
Location and distribution of conventional and renewable energy resources, their environmental effects, and policy questions regarding future development and use of energy resources.

572. Geography as Human Ecology (3)
Prerequisite: Geography 370.
Human ecology related to resource geography. Occasional field trips may be arranged.

573. Water Resources (3) II
Prerequisite: Geography 370 or 371.
Problems of water resources and the problems of water resource development. Occasional field trips may be arranged.

574. Geography of Marine Resources (3)
Prerequisite: Geography 101 or 102.
Economic geography of use of marine biotic and mineral resources. Occasional field trips may be arranged.

575. Field Geography (3)
Prerequisite: Geography 101 or 102.
Problems of maintaining environmental quality in the process of land conversion from rural to urban uses with emphasis on land capability and suitability studies. Occasional field trips may be arranged.

576. Advanced Remote Sensing of the Environment (3) I, II
Prerequisite: Mathematics 250 or equivalent course in statistical methods.
Quantitative methods in geographic research, including computer solutions.

577. Remote Sensing of the Environment (3) I, II
Prerequisite: Geography 101 or 102.
Multiband spectral reconnaissance of the environment. Emphasis on multispectral photography, infrared, microwave scanning systems and multifrequency radar systems, and their uses in the study of cultural and biophysical phenomena.

578. Advanced Remote Sensing of the Environment (3)
Prerequisite: Geography 101 or 102.
Advanced laboratory instruction and practice in cartographic techniques. Computerized methods in presenting for comprehension spatially variable information of a quantitative nature; examination of existing automated mapping systems.

579. Quantitative Methods in Geographic Research (3) I, II
Prerequisite: Geography 370.
Recent research in geographic remote sensing and related fields. Applications of remote sensing in the study of cultural and biophysical environments. Practice in planning, design, execution and interpretation of remote sensing studies. Emphasis on computer programs and applications.

580. Geographical Information Systems (3)
Prerequisite: Geography 370.
Data acquisition techniques. Field use of topographic maps. Geocoding systems, automated land use, land cover and land capability mapping. Directed field work.

GRADUATE COURSES
Refer to the Graduate Bulletin.
Geological Sciences

In the College of Sciences

Faculty
Emeritus: Brooks, McEuen, Roberts, Thomas, Treat
Chair: Abbott
Professors: Abbott, Berry, Berline, Dorman, Gastil, Jiracek, Kern, Krummenacher, Miller, Peterson, Walawender
Associate Professors: Frost, Huntley, Marshall, Placek
Assistant Professor: Rockwell
Lecturer: Terry

Offered by the Department
Master of Science degree in geological sciences.
Major in geological sciences with the B.S. degree in applied arts and sciences.
Minor in geological sciences.
Minor in oceanography.

Geological Sciences Major

With the B.S. Degree in Applied Arts and Sciences

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements." Refer to department for listing of General Education requirements. Geology sciences majors must take all upper division courses listed for the major under Basic Requirements for All Students and the major continued option selected for letter grades only. Some upper division courses may not be taken for credit/no credit.

Preparation for the major and the major consist of basic requirements in the lower and upper division for students plus the requirements in one of the following options: (a) Geology, (b) Engineering Geology, (c) Geochemistry, (d) Geophysics, (e) Marine Geology, (f) Paleontology.

Basic Requirements for All Students

Preparation for the major. Geological Sciences 100 and 101, 105, 221, 224; Biology 100 or Zoology 100, and Chemistry 200 and 201. (28 units.) Recommended: a foreign language and a course in mechanical drawing if not completed in high school.

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 36-40 upper division units in approved courses to include Geological Sciences 100, 101, 105 and twelve units selected from Geological Sciences 301, 303, 305, 314, 319-S, 502, 506, 510, 512, 526, 530, 540, 545, and four courses from the following courses: Geological Sciences 500, 505, 510, 512, 526, 530, 540, 545, and four courses from the following: Geological Sciences 314, 500, 505, 512, 526, 530, 540, 545.

Options

In addition to the basic requirements, the student must complete the requirements in one of the following options:

(a) Geology

Additional preparation for the major. Geological Sciences 230; Mathematics 150 and 250; Physics 180A-180B and 182A-182B; or Physics 195, 195L, 196, 196L, 197, 197L. (19-23 units.) Recommended: Chemistry 310A-310B or 410A-410B; Mathematics 107, 151, 152; Physics 195, 195L, 196, 197, 197L.

Major (continued). Geological Sciences 506, 507, 524, and either 525 or 530; at least one of the following: Geological Sciences 314, 502, 505, 520, 521, 526, 540, 550, 561; plus additional departmentally approved courses to complete a minimum of 36 upper division units for the major. (22 units.)

(b) Engineering Geology

Additional preparation for the major. Geological Sciences 230; Engineering Mechanics 200, Engineering 140; Mathematics 150, 151, 152; Physics 195, 196, 197. (30 units.) Recommended: Civil Engineering 215; Mathematics 195L, 196L, 197L.

Additional preparation for the major. Geological Sciences 230; Engineering Mechanics 200, Engineering 140; Mathematics 150, 151, 152; Physics 195, 196, 197. (30 units.) Recommended: Civil Engineering 215; Mathematics 195L, 196L, 197L.

Major (continued). Geological Sciences 314, 526, 550, 551, and one of the following: Geological Sciences 505, 510, 530, 548 or Civil Engineering 486; Civil Engineering 301, 462, 463. (22 units.)

Because of the preparation in mathematics, physics, and geology called for in this emphasis, the College of Engineering will not require of majors in this option the prerequisites specified for Civil Engineering 301, 444, and 462. Courses to satisfy the requirement of 36 upper division units in the major may be selected from upper division geological sciences courses not explicitly excluded. Students may petition the department to include courses from other disciplines to complete the upper division major requirement.

(c) Geochemistry

Additional preparation for the major. Chemistry 230 or 231, and 251; Mathematics 150, 151, 152; Physics 195, 196, 197, 197L. (32 units.) Recommended: Mathematics 107, Physics 195L, 196L.

Major (continued). Geological Sciences 530; Chemistry 410A-410B; either Geological Sciences 500 or 524; or Geological Sciences 524 and 529; seven units of electives approved by the departmental adviser. (22 units.)

(d) Geophysics

Additional preparation for the major. Geological Sciences 230; Mathematics 107, 150, 151, 152; Physics 195, 195L, 196L, 197L. (29 units.) Recommended: Physics 195L, 197L.

Major (continued). Geological Sciences 501, 512, and an additional nine units selected from 300, 501, 520, 521, 526, 530, 540, 551; Mathematics 340A-340B or Engineering 310 and 510; Physics 311, 350A and an additional three units selected from Physics 400A, 542, Electrical Engineering 340. (30 units.)

(e) Marine Geology


Major (continued). Geological Sciences 501, 512, and an additional nine units selected from 300, 301, 501, 520, 521, 526, 530, 540, 551; Mathematics 340A-340B or Engineering 310 and 510; Physics 311, 350A and an additional three units selected from Physics 400A, 542, Electrical Engineering 340. (30 units.)

(f) Paleontology

Additional preparation for the major. Biology 100L or Zoology 100L; Biology 215; Botany 200; Mathematics 150, or 121 and 122 (alternative of 121 and 122 should not be selected by students planning academic work beyond the B.S. degree); Physics 180A-180B and 182A-182B; Zoology 200. (25-26 units.)

Major (continued). Geological Sciences 506, 507, 516, 526, two courses from the following: Biology 411, 531; Zoology 506, 510, 560, plus additional departmentally approved courses to complete a minimum of 36 upper division units for the major. Recommended: Chemistry 410A-410B for students anticipating postgraduate studies. (28 units.)

(g) Hydrogeology

Additional preparation for the major. Geological Sciences 230; Mathematics 107, 150, 151, 152; Physics 195, 196, 197L. (28 units.) Recommended: Engineering 140; Civil Engineering 218; Physics 195L, 196L, 197L.

Major (continued). Geological Sciences 314, 505, 510 or 512, 526, 530, 551; Mathematics 340A-340B. (24 units.)

Geological Sciences Minor

The minor in geological sciences consists of a minimum of 20 units in geological sciences, twelve of which must be in upper division courses, to include Geological Sciences 100, 101, 105, and twelve units selected from Geological Sciences 301, 303, 305, 314, 319-S, 502, 506. In addition, Geological Sciences 221, 224 and 230 are appropriate for geological minors.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.
Oceanography Minor
The minor in oceanography consists of a minimum of 15 upper division units to include Oceanography 541; Geological Sciences 540, 545, and 548. With approval of the Department of Geological Sciences, Chemistry 501 and either Biology 531 or Zoology 510 may be substituted for any of the geological sciences courses listed above with the exception of Oceanography 541.

The oceanography minor is intended for students with extensive background in the sciences. Students lacking the prerequisites to the required courses should not attempt this minor. Oceanography 320 is not applicable toward the oceanography minor.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

LOWER DIVISION COURSES

100. General Geology (3) I, II
Pursuit of understanding the earth as a whole and its past, present and future evolutionary processes. Unifying concepts such as plate tectonics and its implications, the magnitude of geologic time, uniformitarianism, and the ramifications of the fossil record will be explored. Open to all students except those with previous credit in geology.

101. General Geology Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Geological Sciences 100.
Recognition of common earth features and materials with experience in both field and map relationships. Designed to accompany and augment Geological Sciences 100. Not open to students with previous laboratory credit in geology.

105. Historical Geology (4) I, II
Three lectures and three hours of laboratory. Arrangement for field study during the semester.
Prerequisites: Geological Sciences 100 and 101.
Theories of earth origin, and the evolutionary history of the earth as traced through rock and fossil records. Consideration of the Paleontologic Sequence.

221. Mineralogy (4) I, II
Three lectures and three hours of laboratory.
Prerequisite: Credit or concurrent registration in Geological Sciences 100 and 101.
The origin, occurrence, identification, and classification of rocks in hand specimen.

224. Petrology (3) I, II
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 100, 101 and 221.
Geologic interpretation, and field mapping.

230. Introduction to Geophysics (3) I, II
Prerequisites: Geological Sciences 100 and 101; a course in college physics.
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 100, 101 and 221.
Geologic observation, interpretation, and field mapping.

253. Geology for Engineers (2) I, II
One lecture and three hours of laboratory.
Prerequisite: Civil Engineering 218.
Earth materials, geologic processes, and methods of geologic interpretation of particular concern to the engineer. Open only to students majoring in engineering. Not open to students with credit in Geological Sciences 100 and 101. (Formerly numbered Geological Sciences 153.)

296. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 996 courses applicable to a bachelor's degree.
505. Photogeology (3) II
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 305 and 314.
Geologic interpretation of aerial photographs, elementary stereoscopy and stereometry applied to structural and stratigraphic problems, and compilation of geologic maps from annotated aerial photographs.

506. Paleontology (3) I, II
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 105 and either Biology 100-100L, or Zoology 100-100L.
Principles and methods, exemplified by a study of the morphology, classification, habit, and geologic significance of fossil invertebrates.

Vertebrate Paleontology, see Zoology 560.

507. Stratigraphy (3) II
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 105 and 224.
Stratigraphic principles and practices. Consideration of the North American stratigraphic record.

508. Field Geology (4) I, II, S
One lecture and three hours of laboratory and seven weekend field sessions.
Prerequisites: Geological Sciences 308.
Geologic investigation of an assigned area with preparation of an individual report and a geologic map.

510. Petroleum Geophysics (3) I
Two lectures and three hours of laboratory. Occasional field trips.
Prerequisites: Geological Sciences 305, Mathematics 152, Physics 195, 196, 197. Recommended: Physics 195L, 196L, 197L.
Airborne, surface, and bore-hole geophysical techniques as presently used in oil exploration.

512. Mining Geophysics (3) II
Two lectures, and three hours of laboratory or occasional field trips.
Prerequisites: Geological Sciences 305, Mathematics 152, Physics 195, 196, 197. Recommended: 195L, 196L, 197L.
Airborne, surface, and bore-hole geophysical techniques used for delineation of ore bodies.

516. Micropaleontology (3) II
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 506.
The morphology, classification and geologic significance of the various microfossils.

520. Ore Deposits (3) I
Prerequisites: Credit or concurrent registration in Geological Sciences 224 and 305.
Geologic relations, origin, distribution, and economic significance of metallic and nonmetallic mineral deposits.

521. Petroleum Geology (3) II
Prerequisites: Geological Sciences 224 and 305.
Geologic occurrence of petroleum and the application of geologic principles in exploration and production.

524. Optical Mineralogy (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 221.
Theory and use of the polarizing microscope for determining optical properties of minerals as an aid to their identification.

525. Petrography (3) II
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 524.
A study of rocks with the polarizing microscope; identification of mineral constituents; interpretation of textures; classification of rocks; problems of genesis.

526. Sedimentology (3) I
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 105 and 224.
Origin, description, and interpretation of sedimentary rocks and structures.

530. Geochemistry (3) I, II
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 224, Chemistry 201; Mathematics 121 and 122, or 150.
The relationship of basic chemical principles to geologic phenomena and environments, including applications to geologic exploration problems.

540. Marine Geology (3) I
Prerequisites: Geological Sciences 105, and either Geological Sciences 224, 314, 502, or 506.
Rate tectonic origin and history of the ocean basins. Formation and distribution of sediments in response to biological, chemical, and geological processes.

545. Descriptive Physical Oceanography (3) I
Prerequisites: Mathematics 121 and 122 or 150, Physics 180A or 195.
Physical environment of oceans including heat, water, and salt budgets, physical properties of sea water, sea ice, air-sea relationships, effects of light and sound, distribution of temperature, salinity, density, surface current, deep circulation, water mass formation, instruments and methods of study.

548. Coastal and Estuarine Physical Oceanography (3) II
Prerequisites: Mathematics 121 and 122 or 150, Physics 180A or 195.
Physical processes of marine coastal areas and estuaries. Includes longshore currents, rip currents, real waves in shallow water, wave refraction and diffraction, mechanics of sediment transport, forces and dynamics of estuarine circulations and tides.

550. Engineering Geology (3) II
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 305.
Relationships between geologic processes and works of humans. Topics include rock and soil mechanics, ground water flow, slope stability, seismicity, land subsidence, and evaluation of geologic materials with respect to dam sites, tunnel alignments, and building foundations.

551. Hydrogeology (3) I
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 305 and Mathematics 150.
Theory of ground water flow. Exploration for and development of the ground water resource. Aquifer tests, water quality, and water resource management. Occurrence of water in alluvial, sedimentary, volcanic, plutonic, and metamorphic terrains.

596. Advanced Topics In Geology (1-4)
Prerequisites: Consent of instructor.
Advanced special topics in the geological sciences. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units.
German Minor

The minor in German consists of a minimum of 15 units in German, six units of which must be in upper division courses.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

High School Equivalents

High school foreign language courses may be used for purposes of placement in college courses and may be counted toward meeting the foreign language requirement in various majors. These high school courses will not count as college credit toward graduation.

Secondary school language courses can be used as follows:

1. The first two years of high school level language count as the equivalent of the first semester of a college-level course, although students with fewer than three years of high school level language may complete the first semester college course for graduation credit. Students who have completed three years of foreign language in high school will not receive credit for the first semester college course unless at least five years separate the last high school course and the first college course.

2. The first three years of high school level language count as the equivalent of the first two college semesters, although students with fewer than four years of high school level language may complete the second semester college course for graduation credit. Students who have completed three years of foreign language in high school will not receive credit for the first semester college course unless at least five years separate the last high school course and the first college course.

3. Four years of high school level language count as the equivalent of three college semesters, thus fulfilling the foreign language requirement.

LOWER DIVISION COURSES

Native speakers of German will not receive credit for taking lower division courses in German except with advance approval from the department.

No credit will be given for German 101, 102, 201, 202, 301 taken out of sequence.

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UPPER DIVISION COURSES

(Intended for Undergraduates)

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Prerequisites: German 202 and 212.

Grammar and stylistics; intensive writing practice; reports based on outside reading.
302. Grammar and Composition (3)
Prerequisites: German 202 and 212.
Grammar and stylistics; intensive writing practice; reports based on outside reading.

310. Introduction to German Literature (3)
Prerequisite: German 202.
Introduction to literary study in German, with selected readings representative of different periods and genres.

403. Advanced Oral and Written German (3)
Prerequisites: German 301 and 302.
Advanced forms of oral and written German.

496. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 396, 496, 596 courses applicable to a bachelor's degree.

499. Special Study (1-3) I, II
Prerequisites: Fifteen upper division units in the major with an average of B (3.0) or better and consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES

505. Applied German Linguistics (3)
Prerequisites: German 301 and 302.
Linguistic study of modern German; integration of modern linguistic theory with the language classroom.

510. German Phonetics (3)
Prerequisites: German 202 and 212.
Sounds and intonation of German.

540. German Literature from Its Beginning to the Baroque Period (3)
Prerequisite: German 310.
Literature from the eighth century to about 1700.

545. German Literature of the Eighteenth Century (3)
Prerequisite: German 310.
Reading and discussion of representative works of significant authors and movements of the eighteenth century.

549. Goethe's Faust (3)
Prerequisite: German 310.
Goethe's Faust, Parts 1 and 2; its philosophical content and its position in German and European literature; lectures, reading, reports.

555. German Literature of the Nineteenth Century (3)
Prerequisite: German 310.
Reading and discussion of representative works of significant authors and movements of the nineteenth century.

561. German Literature of the Twentieth Century (3)
Prerequisite: German 310.
Reading and discussion of representative works of significant authors and movements of the twentieth century.

596. Topics in German Studies (3)
Prerequisites: German 310 (for literary topics) or 505 (for linguistic topics).
Topics in German language, literature, or linguistics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 396, 496, 596 courses applicable to a bachelor's degree.

GRADUATE COURSES

Refer to the Graduate Bulletin.
Health Science Minor

The minor in health science consists of a minimum of 15 or 18 units in health science selected from one of two areas:

Community Health Education: Health Science 101, 400, 401, 470, 561.

School Health: Health Science 101, 320 or 321, 331, 475, 574, 576.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

LOWER DIVISION COURSES

101. Health and Life-style (3) I, II

Major variables in human health experience with attention to personal health assessment and application of health knowledge to health behavior.

102. Community Health (3) I, II

Community health problems; the role of the citizen, of the public, and of community health agencies in promoting and protecting the health of the community.

170. Physiology of Reproduction (2)

A series of lectures and discussions dealing with normal and abnormal physiology and anatomy of reproduction; facts and frauds in sex hygiene, and related topics.

220. The Biology of Health (3)

Prerequisite: Biology 100.

Basic human biology in health and disease; the nature and scope of health education.

296. Experimental Topics (1-4)

Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

UPPER DIVISION COURSES

(Intended for Undergraduates)

301. Concepts of Health Science (3)

Development and application of concepts in individual, family, and community health. Involvement in health project work. Not open to students with credit in Health Science 101.

320. Health Education for Elementary Teachers (3) I, II, S

The teacher's function in the different aspects of the elementary school health program, with emphasis on the planning and presentation of instructional materials and community resources and relationships.

321. Health Education for Secondary Teachers (2) I, II, S

The teacher's function in the secondary school health program.

331. Crisis Management (3) I, II

Physical and psychological crisis situations, various procedures and techniques in immediate management and follow-up referrals.

350. Environmental Health Education (3)

Environmental hazards of living and working in this modern technological world, including air, noise, land, food, and water pollution.

351. Occupational and Environmental Hazards (3)

Recognition and prevention of morbidity and mortality in occupational and environmental settings.

355. Consumer Health (3)

Hazards of consumer products from the viewpoint of design and use.

362. International Health (3)

Population dynamics, vital statistics, global disease patterns, and analysis of variations among nations and cultures with respect to health problems and health care services. (Formerly numbered Health Science 562.)
560. Introduction to Public Health (3)
Prerequisite: Health Science 400.
Philosophy, development, organization, administration, and legal aspects of public health in the United States. Disease prevention and control, health education, and the other functions and activities of official health departments, voluntary agencies, private physicians and others engaged in professional health work.

561. Health and Medical Care (3)
Prerequisite: Senior or graduate standing with a major or minor in health education or a closely related area.
Health values, concepts, and attitudes; health products and facilities; hospital care and hospitalization plans; governmental health controls; economic and cultural influences on health and medical care; professional contributions, relationships, and careers; national and international health programs.

563. Health in Later Maturity (3)
An approach to the conservation of human resources, with emphasis on understandings, attitudes, and practices related to health in later maturity. Designed for those with a personal or professional interest in the field.

574. Habit-Forming Substances (3) I, II
Tobacco, alcohol, and other drugs; their use, misuse and abuse.

575. Sex Education (3)
Prerequisite: Health Science 475
Philosophy, current procedures, and materials needed for development of healthy attitudes and scientific knowledge appropriate for the understanding of human sexuality.

596. Workshop in Health Science (1-3)
Selected problems in health science are used as a basis for workshop experiences. Maximum credit six units; maximum credit three units applicable to a master's degree. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

GRADUATE COURSES
Refer to the Graduate Bulletin.

Hebrew
In the College of Arts and Letters

Faculty
Assistant Professor: Gettier

Offered by the Department of
Classical and Oriental Languages and Literatures

Courses in Hebrew.
Major or minor work in Hebrew is not offered.

LOWER DIVISION COURSES
No credit will be given for Hebrew 101, 102, 201 taken out of sequence.

101. Elementary (4) I
Four lectures and one hour of laboratory. Beginning Reading, writing, and conversational skills. Essentials of grammar. Not open to students who have completed three years of high school Hebrew.

102. Elementary (4) II
Four lectures and one hour of laboratory.
Prerequisite: Hebrew 101.
Continuation of Hebrew 101. Not open to students who have completed four years of high school Hebrew.

201. Intermediate (4) I
Four lectures and one hour of laboratory.
Prerequisite: Hebrew 102.
Continuation of Hebrew 102. Applications of grammar and reading skills. Additional practice in conversation.

296. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

UPPER DIVISION COURSES
(Intended for Undergraduates)

496. Topics in Hebraic Studies (1-4)
Topics in Hebraic language, literature, culture, and linguistics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit eight units.

499. Special Study (1-3) I, II
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.
History

In the College of Arts and Letters

Faculty
Emeritus: Nasatir, Norman, Rader, Ragen, Ridout, Rohlfisch, Webb
Chair: Berge
Associate Professors: DuFault, Finer, Flemion, P., McDean, Oades
Assistant Professor: Bartholomew

Offered by the Department
Master of Arts degree in history; and a Master of Arts degree for teaching service with a concentration in history.
Major in history with the A.B. degree in liberal arts and sciences.
Teaching major in history for the single subject teaching credential.
Minor in history.
Certificate in public history.

Advising
All College of Arts and Letters majors are urged to consult with their department adviser as soon as possible; they are required to meet with their department adviser within the first two semesters after declaration or change of major.

History Major
With the A.B. Degree in Liberal Arts and Sciences
All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements." A minor is not required with this major.

Preparation for the major. Twelve units selected from two of the following sequences: History 100-101, 105-106, 110A-110B; 115A-115B, or 120-121.

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Refer to section of catalog on "Graduation Requirements."

Upper Division Writing Requirement. History 430W with a grade of C (2.0) or better.

Major. A minimum of 36 upper division units in history to include History 430W with the remaining units distributed in the following pattern:

Elective: Three units. History 425 is recommended.

History Minor
The minor in history consists of a minimum of 18 units in history to include six sequential units in the lower division. Twelve units must be in upper division history, distributed in no more than two of the fields listed under the history major.
Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements. If applicable.

LOWER DIVISION COURSES

100. World History (3)
The growth of civilizations and the interrelationships of peoples of Europe, Asia, Africa, and America to 1650.
101. World History (3)
Modern history from a global perspective. 1650 to the present.
105. Western Civilization (3)
Development of European culture, thought and institutions from ancient times through the seventeenth century. Not open to students with credit in History 305A.
106. Western Civilization (3)
Developement of modern societies and states to the present day. Not open to students with credit in History 305B.
110A-110B. American Civilization (3-3)
The political and social development of the United States, with emphasis on the rise of American Civilization and ideals. This course is primarily for lower division students.
The year course meets the graduation requirements in American Institutions, U.S. Constitution and California state and local government.
115A-115B. Comparative History of the Americas (3-3)
The western hemisphere from ancient times to the present, with focus on the interactions between the European, Amer-Indian and Afro-American cultures, institutions and traditions. Semester I: Ancient American civilizations, European colonial systems, creation of new nations. Semester II: Nations and cultures of the Americas since independence. The year course meets the graduation requirements in American Institutions, U.S. Constitution and California state and local government.
120. Introduction to Asian Civilizations (3)
Development of distinctive cultures, thought and institutions in Asia.
121. Asian Civilizations in Modern Times (3)
The rise of Asian nations and nationalism with emphasis on the nineteenth and twentieth centuries.
296. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

UPPER DIVISION COURSES
(Intended for Undergraduates)

305A-305B. The Sources of Civilization in the West (3-3)
Prerequisites: Open only to upper division students.
A survey of the most important ideas and attitudes which have shaped Western Civilization since ancient times. Emphasis on cultural themes rather than a political continuum. Not open to students with credit in History 105 and 106. The course cannot be used to satisfy requirement for the major.

310A-310B. United States History (3-3)
Survey of American history. Semester I: 1865 to 1877. Semester II: 1877 to the present. Designed primarily for students seeking upper division elective or graduation requirements in American institutions. 310A-310B together meet all graduation requirements in American history and institutions. U.S. Constitution, and California government. Not open to students with History 110A-110B or the equivalent. It may not be counted toward requirements for the history major.

340. Environmental Problems in Historical Perspective (3) I, II
Past attitudes, policies, and behavior toward the land in context of religious and ethical beliefs, social values, economic practices, and political systems. Cannot be used to satisfy requirements for major.

396W. Writing Proficiency (3)
Expository writing course intended only for students not majoring in history. Emphasis on clear, concise, and well-organized prose based on study of a selected historical question. Designed for students not majoring in history. Cannot be used to satisfy requirements for major.

430W. The Writing of History (3) I, II
Historical method and research in some aspect of history. Satisfies University upper division writing requirement for students who have completed 60 units. Satisfies the Writing Competency requirement, and completed the General Education requirement in Written Communication. May not be used to fulfill upper division requirements in the history major.

496. Special Study (1-3) I, II
Preliminary study. Consent of department chair and instructor. Individual study. Maximum credit six units.

Field (a). Ancient, Medieval and Early Modern Europe

UPPER DIVISION COURSE
(Intended for Undergraduates)

496. Issues in History (1-4)
Refer to Field (g). Topical Subjects.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

500A-500B. Ancient History (3-3)
Semester I: Greece to the Roman Conquest. Semester II: Rome to the fifth century A.D.

501. History of Ancient Near Eastern Civilizations (3)
Major civilizations of Near East from the origin of civilization to Roman Conquest, including Egyptians, Babylonians, Hebrews and Persians. Social, political, and religious problems.

Field (b). Modern Europe

UPPER DIVISION COURSES
(Intended for Undergraduates)

407A-407B. Modern Europe (3-3) I, II
History of Europe from the Renaissance to the present. Social, economic, and intellectual trends, the development of the nation-state, and the reasons for continental conflict. Semester I: The Renaissance to 1789. Semester II: The French Revolution to contemporary times. Required for the teaching credential in history.

408A-408B. England (3-3)
Political and social history of England from the earliest times to the present day. Stretching the origins of American institutions and social patterns. Recommended for majors in English.

496. Issues in History (1-4)
Refer to Field (g). Topical Subjects.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

509. Europe in the Seventeenth Century (3)
Continental Europe from 1600 to the death of Louis XIV. Shift of power from southern and central Europe to northern Atlantic countries; the growth of the state, and the expansion of commerce.

510A-510B. Europe's Age of Enlightenment (3-3)
Semester I: Monarchies and monarchs at peace and war; economic and social transformations; the Baroque and the growth of the Enlightenment from 1690 to 1760; Semester II: Despots, dreamers and enlightened reformers in the last generations of Europe's "Old Regime," 1760-1789.

511A. The Age of European Revolution (3)
Major economic, social, intellectual, and political changes in Europe from 1789 to 1848. Effects of French Revolution, Industrial Revolution, and Romanticism on European history.

511B. The Age of Nationalism in Europe (3)
Economic, social, and intellectual developments in Europe from 1848 to 1890 that contributed to the age of nation building.

512A. The Great War: A Turning Point In European History (3)
Forces and events that shaped Europe in period prior to and during World War I, 1890-1919.

512B. The Age of Dictators and Contemporary Europe (3)
Europe in the age of dictatorship, world war, decline, and recovery.

513A-513B. Scandinavia (3)
The major political, social and economic developments in Scandinavia from 1814 to the present.
514A. The French Revolution and Napoleonic Era (3) I
Prerequisites: History 105 and 106.
France on the eve of the Revolution; the Great Revolution, 1789-1799; the Napoleonic Era.

514B. Modern France (3)
Prerequisite: History 105 and 106.
The development of France since 1815.

515. Modern Spain (3)
Social, economic and political developments from the sixteenth century to the present. Overseas expansion.

517A-517B. Modern Germany (3-3)
Political, social, and economic history of Germany. Semester I: From the Reformation to the outbreak of World War I. Semester II: 1914 to the present.

518A-518B. Russia and the Soviet Union (3-3)
Semester I: Political, social and economic development of Russia in Europe and Asia from the earliest times to the close of the nineteenth century. Semester II: Emphasis on the twentieth century.

519. Modern Italy (3)
The development of Italy from 1815 to the present.

521A-521B. Constitutional History of England (3-3)
Evolution of the common law and the development of parliamentary institutions.

522A-522B. Tudor and Stuart England (3-3)

523A-523B. Modern Britain (3-3)
Semester I: The development of constitutional and social patterns from the Glorious Revolution to the French Revolution, emphasizing the immediate background to the American Revolution. Semester II: From the nineteenth century to the present, including the rise of parliamentary democracy, imperialism and the Victorian age, and political thought from the Utilitarians to the Fabians.

524. History of Ireland (3) I, II
Social and cultural history of Ireland from earliest historical times to the present, including formation of a national character, literature from the Saga Cycles to the modern literary renaissance, and various movements to achieve independence from Cromwell through World War I.

526. Ideas and Attitudes of Modern Europe (3)
Selected problems in European intellectual history beginning with the seventeenth century, with attention to social and political thought. May be repeated with new content. See Class Schedule for specific content. Maximum credit: six units.

527A-527B. Diplomatic History of Modern Europe (3-3)
Diplomatic relations of the various European states with European and non-European powers. Semester I: From the Concert of Europe (1815) to the Era of Realpolitik in the late nineteenth century. Semester II: The diplomatic backgrounds and results of two wars.

528A-528B. Social History of Modern Europe (3-3)
Historical survey of European society emphasizing changes in the family, health, diet, the standard of living, urbanism, crime, migration and literacy. Semester I: From 1350 to the beginning of Industrial Revolution. Semester II: From the Industrial Revolution to the present.

Field (c). United States

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

410A-410B. United States History for Teachers (3-3)
Prerequisite: History 410A is prerequisite to History 410B.
Survey of United States history, with emphasis on historiography, bibliography, and relationship between philosophy of history and teaching. Semester I: to 1877. Semester II: since 1877. Intended primarily for students in teacher training programs. History 410A-410B meets all graduation requirements in American history and institutions. U.S. constitution, and California government. Not open to students with credit in History 310A-310B.

442A-442B. People Out of Our Past (3-3)
A biographical approach to American history. Semester I: Through 1865; John Winthrop, Benjamin Franklin, Thomas Jefferson, PT Barnum, Lucy Stone, Frederick Douglass, John Brown, Abraham Lincoln. Semester II: 1865 to present; Mark Twain, Jane Addams, Emma Goldman, Woodrow Wilson, Henry Ford, Eleanor Roosevelt, Martin Luther King, Bob Dylan, Richard Nixon.

496. Issues in History (1-4)
Refer to Field (g). Topical Subjects.

530. Colonial America (3)
Settlement of British colonies in North America and their development into a distinctive American civilization through modification of Old World institutions in the new environment.

531. The American Revolution (3)
Development of colonial resistance to British rule after 1760, the War for Independence, the Confederation, and the Constitution of 1787. This course meets the requirements in United States Constiuition.

532. The Early Republic (3)
Political, economic, and social development of United States from Washington through John Quincy Adams. This course meets the requirements in United States Constitution.

533A. The Jacksonian Era (3)
Territorial expansion, democratic politics, revivalism, and the slavery controversy.

533B. Civil War and Reconstruction (3)
The Civil War and Reconstruction, emphasizing political affairs and the role of Lincoln.

534. The Rise of Modern America, 1868-1900 (3)
Economic, social, political, and intellectual developments from the end of the Civil War to the close of the 19th century.

535A. The Age of Reform (3)
The United States from the 1890s to the Crash of 1929.

535B. The Age of Roosevelt (3)
The United States in Depression, War, and Cold War.

536. The United States Since World War II (3) I, II, S
Major foreign and domestic issues confronting the United States, and the government policies and popular movements generated in response.

537A-537B. The Westward Movement (3-3)
The American frontier: Expansion, exploration, settlement and building of the new states, with emphasis on frontier problems of defense, communications, finance, etc.; the development of cultural institutions. The causes, effects and results of the frontier experiences of the American people. This year course meets the graduation requirement in American history institutions and ideas.

538A-538B. The American Southwest (3-3)
Semester I: Exploration, colonization and development of the Southwest under Spanish and Mexican rule. Emphasis on frontier institutions and Indian policy. Semester II: Anglo-American penetration and acquisition of the Southwest. Themes such as boundary problems, mining, transportation, water, ranching and ethnic relations.

540. Environmental History of the United States (3)
The relationship of Americans to their environment from colonial times to the present with emphasis on how attitudes and values have affected personal behavior and public policy toward the land.

541A-541B. California (3-3)
Political institutions, social, cultural, economic and intellectual development, international background. Semester I: To 1850; Spanish and Mexican heritage. Semester II: 1850 to the present. History 541B will fulfill the requirement in California state and local government.
543A-543B. The City in American History (3-3) I, II
- Development, character and role of city in American history. Through study of the city as a social-cultural organization and political-economic center, the course will examine urban institutions, populations, problems, values, decision making, services.

544A-544B. American Foreign Policy (3-3)
- Semester I: The development of American foreign policy from the Colonial Period to the First World War. Semester II: Developments from the First World War to the present. This year course meets the graduation requirements in American history, institutions, and ideas.

545A-545B. Constitutional History of the United States (3-3)
- American constitutional history since the establishment of the federal government. This year course meets the graduation requirement in U.S. Constitution and in American history, institutions and ideas.

546A-546B. Development of American Capitalism (3-3)
- The changes in agriculture, industry, labor, banking, transportation and commerce in a capitalist society with emphasis on the prominent personalities who made the changes possible.

547A-547B. Intellectual History of the American People (3-3)
- Survey of American thought from 1620 to the present, focusing on the ideas of individuals, groups and movements in religion, politics, society, the arts and reform. Emphasis on liberal and conservative impulses and their role in the making of the modern American mind. This year course meets the graduation requirements in American institutions, U.S. Constitution, and California state and local government.

548A-548B. Social History of the United States (3-3)
- Historical survey of American society emphasizing demographic trends, the changing role of the family, social structure, immigration patterns, religious movements, developments in education, the economy and entertainment.

Field (d). Latin America

UPPER DIVISION COURSES (Intended for Undergraduates)

415A-415B. Latin America (3-3)
- Semester I: Colonial Period to approximately 1825. Semester II: Republican Latin America. Not open to students with credit in History 115A-115B.

496. Issues in History (1-4)
- Refer to Field (g). Topical Subjects.

UPPER DIVISION COURSES (Also Acceptable for Advanced Degrees)

511A-551B. Mexico (3-3)
- Prerequisite: History 115A-115B or 415A-415B. Semester I: Colonial and modern Mexico. Semester II: Emphasis on the twentieth century.

552. Brazil (3)
- Survey of history of Brazil from Portuguese backgrounds to present. Brazil as a tropical society recommended for students minoring in Portuguese.

553. Caribbean Island Nations (3)
- History of island nations of Caribbean with emphasis on Cuba, Haiti, and Dominican Republic in the nineteenth and twentieth centuries.

554. The Andean Republics of South America (3)
- The historical development of Chile, Bolivia, Peru and Ecuador with emphasis on race relations and social revolutions in the 20th century.

555. Modernization and Urbanization in Latin America (3)
- Historical treatment of the phenomena of urbanization and modernization in Latin America with attention to pre-Columbian and Iberian traditions and influence of education, church, military, and foreign investment.

Field (e). South, Southeast and East Asia

UPPER DIVISION COURSES (Intended for Undergraduates)

420. Asia's Dynamic Traditions (3)
- Emergence and continuing vitality of historic traditions in India, China, and Japan. Topical, comparative survey emphasizing Confucian, Buddhist, and Hindu ideas and the interaction with institutions of family and village. Not open to students with credit in History 120.

421. Asia's Emerging Nations (3)
- Topical, comparative approach emphasizing ways Asian societies have responded to challenges of imperialism, nationalism, revolution, war, and modernization. Not open to students with credit in History 121.

496. Issues in History (1-4)
- Refer to Field (g). Topical Subjects.

UPPER DIVISION COURSES (Also Acceptable for Advanced Degrees)

561A-561B. Asia and the West (3-3)
- History of Asian-Western relations with emphasis on China and Japan. Semester I: Through the nineteenth century. Semester II: The twentieth century.

562. Civilization of India: The Great Traditions (3)
- From earliest times to the eighteenth century including Hindu, Buddhist, and Muslim contribution to Indian society, changing political ideas and institutions, and historic trends in art and literature.

563. Modern India and Its Neighbors (3)
- British conquest and colonial policy. Hindu and Muslim nationalism. Gandhi's significance, and the emergence of independent India, Pakistan, and Bangladesh.

564A-564B. Southeast Asia (3-3)
- Semester I: Cultural traditions of Southeast Asian peoples. Indigenous institutions and the influence of China, India and Islam. Semester II: Southeast Asia in the modern world. Patterns of foreign stimulus and local response among the peoples of the area.

565. Revolution and Social Change in Asia (3)
- Comparative study of contemporary problems in Asia emphasizing how indigenous peoples responded to the challenges of nationalism, reform, revolution, modernization, and neocolonialism. Topics include social structure, education, peasant movements, urbanization, search for cultural identity, and national integration.

566. Chinese Civilization: The Great Traditions (3)
- China's institutional and cultural development from ancient to prernodern times. Emphasis on traditional philosophies, religions, literature, and the arts.

567. China's Century of Modernization (3)
- China's modernization process from the early nineteenth century Opium War through the People's Republic of China.
568. Communist Party and the Chinese Revolution (3)
Mao and the evolution of Chinese Communist Party since 1920, including Red Army, rural soviets, socialist economic and cultural systems, and foreign policy.

569. Japanese Civilization (3)
Japanese internal history and institutions during the period of indigenous development and Chinese influence including religions, philosophy, literature and the arts.

570. Modern Japan (3)
Japan's development as a modern state, particularly in the nineteenth and twentieth centuries.

Field (f). Africa and Middle East
UPPER DIVISION COURSES
(Intended for Undergraduates)

472A-472B. Middle Eastern History from the Rise of Islam to the Present (3-3)
Semester I: Islamic civilization in the imperial ages, 600-1600. Semester II: Colonialism and nationalism in the modern Middle East.

473A-473B. Africa (3-3)
Semester I: Civilization of precolonial Africa both north and south of the Sahara from the advent of Islam to 1880. Semester II: Colonial and postcolonial Africa.

496. Issues in History (1-4)
Refer to Field (g). Topical Subjects.

UPPER DIVISION COURSE
(Also Acceptable for Advanced Degrees)

574. The Arab-Israeli Question, Past and Present (3)
Arab-Israeli conflict over Palestine in perspective of Zionism, Arab nationalism, and Great Power relations from nineteenth century to present.

Field (g). Topical Subjects
UPPER DIVISION COURSES
(Also Intended for Undergraduates)

425. Great Historians and Historical Literature (3)
Lectures and readings in the history of history and the works of major historians. Open to all upper division students; especially recommended for history and social science majors.

435. History Through Film (3)
Critical analysis of selected historical problems, eras and events, using film as the principal historical document. Maximum credit six units.

481A-481B. The Contemporary World in Historical Perspective (3-3)
Trends and developments in the recent past which can contribute to an understanding of the problems of our age. (Formerly numbered History 581A-581B.)

482A-482B. War and Civilization (3-3)
The political and social implications of warfare, of the development of military technologies, and of changing concepts of military organization. Semester I: Through the eighteenth century. Semester II: Napoleonic Wars to the present.

483A-483B. The Quest for Peace (3-3)
Prerequisite: Six units in history. Historical analysis of man's efforts to control violence from the Greeks to the present.

484. The Rise of Modern Science (3)
Historical development of scientific ideas from ancient Greece to the Scientific Revolution of the seventeenth century, concentrating on interaction between science and other aspects of society such as politics, economics, religion, and technology.

485. Science and the Modern World (3)
From Newton to Einstein, from Darwin to DNA: modern development of interaction between science and other aspects of society such as politics, economics, philosophy, religion, and technology.
Faculty majors.
Faculty assigned to teach courses in humanities are drawn from departments in the College of Arts and Letters. Dr. Leon Rosenstein is chair of the Humanities Committee and is also director of the European Studies Program and adviser to European Studies and Humanities majors.

Offered by the College of Arts and Letters

Major in European studies with the A.B. degree in liberal arts and sciences.
Minor in humanities.
Minor in European studies.
Minor in Humanities.

All classes are conducted in English.

Advising

All College of Arts and Letters majors are urged to consult with their department adviser as soon as possible; they are required to meet with their department adviser within the first two semesters after declaration or change of major.

European Studies Major

With the A.B. Degree in Liberal Arts and Sciences

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."

Preparation for the major.

History 105, 106, 107, 108, 109; six units from Art 258 or 259.

Comparative Literature 210, Economics 101 or 102, English 220, Geography 102, Political Science 101 or 103 (15 units).

Foreign Language Requirement.

Twelve units in French, German, Italian, Latin, Russian or Spanish.

Upper Division Writing Requirement.

Passing the University Writing Examination or English 508W and 508B. (15 units.)

Preparation for the minor.

History 100 and 101, or 105 and 106; three units selected from Humanities 130, 140, 157, 158, Classics 140, Women's Studies 205; six units selected from Art 258, 259, Music 151, Drama 105, 120, 460B, 460B, Drama 130, 140, 157, Arab-Islamic Culture and Civilization (3).

157. Arab-Islamic Culture and Civilization (3)

Preparation for the major. History 100 and 101, or 105 and 106; three units selected from Humanities 130, 140, 157, 158, Classics 140, Women's Studies 205; six units selected from Art 258, 259, Music 151, Drama 105, 120; three units selected from Philosophy 101, 102, 103, Religious Studies 101, Comparative Literature 270A-270B; and three additional units selected from the courses listed above excluding history. (18 units.)

Foreign Language Requirement.

 Twelve units in Arabic, Chinese, French, German, Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, or Spanish.

Writing Requirement.

Passing the University Writing Examination or English 500W or 50BW with a grade of C (2.0) or better.

Major.


Humanities Minor

The minor in humanities consists of a minimum of 21 units, 12 of which must be upper division. No more than six units may be taken in any one department. In order to ensure a cohesive program, students must seek prior approval of the humanities minor adviser to determine which courses can be used to satisfy requirements for this minor. The plan must be approved and filed with the Evaluations Office.

Plan A - Disciplinary Structure.


Plan B - Interdisciplinary Structure.

Six units selected from Humanities 130, 140, 157, 158, Women's Studies 205; three units from Humanities 402B, nine units selected from Humanities 401A, 401B, 402A, Asian Studies 458A, 458B, Classics 340, Spanish 441; and three units selected from Art 256, 259, Drama 105, 120, Music 151.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

LOWER DIVISION COURSES

101. Introduction to Humanities (3)

Preliminary investigation: How values and ideas are expressed in the literary, artistic and intellectual achievements of individuals and civilizations throughout the world.

102A-102B. Introduction to European Heritage (3-3)

Integrated survey from an interdisciplinary perspective of the major achievements of European culture, especially those in art, literature, music, and philosophy, and emphasizing their relevance for contemporary civilization. Semester I: 476-1600. Semester II: 1600 to 1940.

130. The Jewish Heritage I (3)

Major Hebraic concepts of the Biblical and post-Biblical periods; their impact on Western civilization and their contemporary relevance.

131. The Jewish Heritage II (3)

Major Hebraic concepts from medieval through modern times; their impact on Western civilization and their contemporary relevance.

140. Mythology (3)

Major myths of the world in ancient and modern versions.

157. Arab-Islamic Culture and Civilization (3)

Interdisciplinary survey of Islamic culture and civilization, emphasizing religious beliefs, their developments, and their role in creating or being integrated with sociopolitical systems of the Islamic Near East from the time of Muhammad to the present.
158. African Culture and Civilization (3)
An interdisciplinary survey.

296. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

UPPER DIVISION COURSES
(Intended for Undergraduates)

310. French Civilization (3) I
French culture from the earliest times to the Enlightenment, with emphasis on the people, their social and political institutions, their arts and letters. Not open to students with credit in French 421.

311. French Civilization (3) II
French culture from the Enlightenment to the present. Continuation of Humanities 310. Not open to students with credit in French 422.

320. German Civilization (3) I
Investigation of the forces shaping German civilization in the Middle Ages and the Renaissance. Emphasis on history of ideas with reference to their manifestations in the arts and social institutions.

321. German Civilization (3) II
Investigation of the forces shaping German civilization since the Renaissance. Emphasis on history of ideas with reference to their manifestations in the arts and social institutions.

330. Russian Civilization (3) I
The major currents and characteristics of Russian culture, as expressed through the centuries in literature, art, philosophy and music from the beginnings to early nineteenth century.

331. Russian Civilization (3) II
Modern Russia's cultural development from early nineteenth century (The Golden Age) to the present.

340. Italian Civilization (3) I
The major aspects of Italian civilization with emphasis on literature, art, philosophy, music and history from the earliest times to the Renaissance.

341. Italian Civilization (3) II
Continuation of Humanities 340 from the Renaissance to the present.

350. Spanish Civilization (3)
The principal aspects of Spanish civilization with emphasis on literature, philosophy and the arts. Not open to students with credit in Spanish 440.

370. The Humanities and the Modern World (1) Irregular Cr/NC
Lectures open to the public. Weekly lectures on literature, language, philosophy and cultural history. Reading and reports required of students enrolled for credit. Maximum credit three units.

400. Civilization Through Travel/Study (1-3)
Civilization through supervised foreign travel/study tour. May be repeated with new content. Maximum credit six units.

401A-401B. The Cultural Heritage of Europe I, II (3-3) I, II
European civilization from the Middle Ages to the end of the sixteenth century with emphasis on major cultural movements. Semester I: Romanesque and Gothic; Semester II: Renaissance, Reformation, Mannerism.

402A-402B. The Cultural Heritage of Europe III, IV (3-3) I, II
European civilization from the seventeenth to twentieth centuries with emphasis on major cultural movements. Semester I: Baroque, Rococo, Neo-Classicism; Semester II: Romanticism, Realism, Naturalism, Symbolism, Expressionism, Existentialism, Structuralism.

496. Topics In Humanities (3)
Selected topics in literature and the arts. Comparative themes and critical approaches. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units.

498. Senior Seminar (3)
Advanced study of an aspect of European studies. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units.

499. Special Study (1-3)
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSE
(Also Acceptable for Advanced Degrees)

580. Seminar: Topics (3)
Special topics appropriate to the interdisciplinary study of civilization. Reading, observation and evaluation of scholarly literature of topic under consideration. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units.
Industrial Arts

In the Department of Industrial Studies
In the College of Professional Studies and Fine Arts

Faculty
Emeritus: Anderson, Igang, McLoney, Rasmussen
Chair: Dirksen
Professors: Bailey, G.D., Dirksen, Guentzler, Hammer, McMullen, Thiel
Associate Professors: Bailey, G.W., Lybarger, Marsters, McEowen
Lecturer: Swadell

Offered by the Department of Industrial Studies
Master of Arts degree in industrial arts.
Major in industrial arts with the A.B. degree in applied arts and sciences.
Teaching major in industrial arts for the single subject teaching credential.
Minor in industrial arts.

Industrial Arts Major
With the A.B. Degree in Applied Arts and Sciences
All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."
A minor is not required with this major.

Preparation for the major. Industrial Arts 100 and 121 to be taken at the beginning of the major; four courses selected from Industrial Arts 115, 131, 140, 151, 161, 171, 181; and 12 upper division units to include six units in each of two of the following fields: industrial drawing, metalworking, plastics, woodworking, electricity-electronics, power technology, graphic arts, industrial crafts, and photography; and six additional units in industrial arts excluding Industrial Arts 498 and 499.

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 24 upper division units to include nine units in each of two of the following fields: industrial drawing, metalworking, plastics, woodworking, electricity-electronics, power technology, graphic arts, industrial crafts, and photography; and six additional units in industrial arts excluding Industrial Arts 498 and 499.

Industrial Arts Major*
For the Single Subject Teaching Credential
All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the College of Education. This major may be used by students in teacher education as an undergraduate major for the A.B. degree in applied arts and sciences.

Preparation for the major. Industrial Arts 100 and 121 to be taken at the beginning of the major; four courses selected from Industrial Arts 115, 131, 140, 151, 161, 171, and 181. (17 units.)

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 30 upper division units to include Industrial Arts 492; nine units in each of two of the following fields: industrial drawing, metalworking, woodworking, electricity-electronics, power technology, and graphic arts; and nine units in industrial arts excluding 498 and 499.

*The major for the Single Subject Teaching Credential has been submitted to the Commission on Teacher Credentialing. Consult department to verify current program requirements.

Industrial Arts Minor
The minor in industrial arts consists of 23 units in industrial arts to include Industrial Arts 100, 121; six units selected from Industrial Arts 115, 131, 140, 151, 161, 171, 181; and 12 upper division units to include six units in each of two of the following fields: industrial drawing, metalworking, plastics, woodworking, electricity-electronics, power technology, graphic arts, industrial crafts, and photography.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

Certificate

Manual Arts Clinical Training
(Vocational Rehabilitation Therapy)
Students may complete the academic and clinical requirements leading to the Manual Arts Therapist certificate issued by the Veterans Administration of the United States Government. This certification requires the completion of a bachelor's degree in an Industrial Arts major and 280 hours of clinical training in a veterans hospital. Consult an adviser in the Department of Industrial Studies for more detailed information.

LOWER DIVISION COURSES

100. Introduction to Industrial Studies (2) I, II
Required of all industrial arts majors during their first semester.

For the Single Subject Teaching Credential
The history and philosophy of industrial arts with emphasis on the current status and development of the secondary school curriculum. Discussion of professional requirements, obligations and development.

115. Industrial Plastics (3) I, II
Six hours of laboratory.
Introduction to basic processes; molding, casting, thermofoming, reinforcing and foaming.

121. Industrial Drawing (3) I, II
Six hours of laboratory.
Fundamental theories, procedures and techniques of modern industrial drafting; study and practice intended to develop skill and judgment in application to drafting as the universal language of industry.

131. Industrial Metalworking (3) I, II
Six hours of laboratory.
Introduction to the various terms of power transmission with emphasis on small gas engines and automotive preventive maintenance.

140. Introduction to Photography (3) I, II
Six hours of laboratory.
A consideration of photographic optics and chemistry; nature of light and image formation; photographic emulsions, exposure and development. Composition and lighting. Not open to students with credit in Industrial Arts 540 or Journalism 350.

151. Industrial Woodworking (3) I, II
Six hours of laboratory.
Fundamental theories, procedures and techniques of modern industrial drafting; study and practice intended to develop skill and judgment in application to drafting as the universal language of industry.

160, DC and AC Circuit Analysis (3) I, II
Six hours of laboratory.
Planning, designing, constructing, and experimenting to develop skills and acquire knowledge in the electronics field. Basic principles, their application to modern electronic equipment, and correct use of test equipment.

171. Power Mechanics (3) I, II
Six hours of laboratory.
Introduction to the various forms of power transmission with emphasis on small gas engines and automotive preventive maintenance.

181. Introduction to Graphic Arts (3) I, II
Six hours of laboratory.
The theory and practice in planning, designing and processing in the various graphic reproduction activities involving type, stencils, paper, and allied materials.
380. Industrial Arts

UPPER DIVISION COURSES
(Intended for Undergraduates)

301. Industrial Crafts (3) I, II
Six hours of laboratory.
Prerequisite: Previous industrial arts experience.
Emphasis on skills in the industrial arts crafts by laboratory experiences in such areas as:
-- jewellery
-- leather
-- enameling
-- mosaics.
Stress on creativity in design and in utilization of materials.

315. Tooling for Plastics Production (3) I, II
Six hours of laboratory.
Prerequisite: Industrial Arts 115.
Design and use of basic tooling; dies for injection and compression molding, forms for
reinforced plastics processes, and molds for thermoforming and casting.

321. Intermediate Industrial Drawing (3) I, II
Six hours of laboratory.
Prerequisite: Industrial Arts 121.
Complex theories and techniques of graphic delineation. Activities selected to develop
individual competence.

331. Machine Tool Processes (3) I, II
Six hours of laboratory.
Prerequisite: Industrial Arts 131.
Study of machine tools as a manufacturing medium emphasizing precision measurement,
standards, tolerance and inspection methods.

341. Intermediate Photography (3) I, II
Six hours of laboratory.
Prerequisite: Industrial Arts 140 or 540.
Exposure theory, sensitometry, contrast control, specialized development, and advanced
studies of photographic lenses and equipment.

351. Machine Woodworking (3) I, II
Six hours of laboratory.
Prerequisite: Industrial Arts 151.
Experience in the use of selected woodworking machines which offer opportunities for the
development of construction activities in wood. Emphasis on creative design and sound safety
practices.

361. Transistor Circuits and Applications (3) I, II
Six hours of laboratory.
Prerequisite: Industrial Arts 161.
Development of skills through planning, designing, constructing and experimenting.
Emphasis on the application of advanced transistor principles for use in power, transmission,
communication, radio and television.

371. Power Systems (3) I, II
Six hours of laboratory.
Prerequisite: Industrial Arts 171.
Power systems to include sources of power, power transmission, and its utilization.
Emphasis on internal combustion engine to include theory of operation, system design, and machining
operations.

381. Intermediate Graphic Arts (3) I, II
Six hours of laboratory.
Prerequisite: Industrial Arts 181.
Activities in the various graphic arts with emphasis on new technology in the industry.

402. Advanced Industrial Arts Crafts (3) I, II
Six hours of laboratory.
Prerequisite: Industrial Arts 301.
Advanced techniques of industrial arts crafts. Development of audiovisual aids, projects,
and resource materials with emphasis on physical setting, organization, and other pertinent
laboratory problems.

416. Thermoplastics (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 115.
Composition and selection of materials; evaluation of physical and mechanical properties of
various thermoplastics; special techniques for processing and production of thermoplastics.

422. Architectural Drafting (3) I, II
Six hours of laboratory.
Prerequisite: Industrial Arts 121.
Architectural drafting, primarily in small home planning. Development of drafting skills and
understanding of good contemporary home design.

432. Welding Processes and Procedures (3) I, II
Six hours of laboratory.
Prerequisite: Industrial Arts 131.
A study of the basic welding processes with emphasis on physical principles and
properties, inspection methods and equipment operations.

443. Problems in Photography (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 341.
Technical research problems in photography.

444. Color Photography (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 341.
Study of color films and papers in relation to the theory of color photography.

452. Industrial Woodworking (3) I, II
Six hours of laboratory.
Prerequisite: Industrial Arts 351.
Exposure and processing techniques as applied to current color films and papers in relation
to the theory of color photography.

462. Electronic Circuit Applications (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 361.
Introduction to electronic analog circuits, with emphasis on instrumentation and measurement
techniques.

464. Basic Digital Computers (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 361.
Introduction to digital computer design, including the logic circuits used in digital computers.

465. Communication Circuit Applications (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 361.
Introduction to electronic circuit applications, with emphasis on instrumentation and measurement
techniques.

472. Power System Diagnosis (3) I, II
Six hours of laboratory.
Prerequisite: Industrial Arts 371.
Theory and application of various types of diagnostic testing equipment, with emphasis on
trouble shooting and power system analysis.

482. Advanced Graphic Arts (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 381.
Course designed to increase professional skills, craftsmanship, advanced technical skills in
equipment maintenance, patternmaking, design analysis, and upholstery.

484. Color Photography (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 341.
Technical research problems in photography.
491. Manual Arts Therapy Clinical Training (6)
Prerequisite: Consent of department chair.
Supervised experiences in manual arts therapy at various Veterans Administration Hospitals and rehabilitation centers. Students will acquire, through observation and participation, clinical insight and experience in procedures and practices in the field. Two hundred forty hours of clinical training required.

492. Teaching Methods in Industrial Education (3) I, II
Study of methodology needed to teach industrial subjects. It is recommended that this course be taken prior to student teaching.

496. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

498. Senior Project (3) I, II
Six hours of laboratory.
Prerequisite: Consent of instructor.
Each student will work on a project in a selected industrial arts activity area. Oral progress reports will be made and a final written report is required.

499. Special Study (1-3) I, II
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

503. Advanced Industrial Crafts (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 402.
Advanced techniques of industrial crafts. Concentration on the design of craft projects with best utilization of materials. Development, in at least three areas specified by the instructor, of individual exhibits showing originality.

507. Thermoset Plastics (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 115.
Composition and selection of materials; evaluation of physical and mechanical properties of various thermoset plastics, special techniques for processing and production of thermoset plastics.

523. Industrial Arts Drawing (3) I, II
Six hours of laboratory.
Prerequisite: Industrial Arts 121.
Practice in and analysis of modern industrial drafting techniques and theories.

533. Applied Metal Forming Operations (3) I, II
Six hours of laboratory.
Prerequisite: Industrial Arts 131.
Theory of conventional and high energy industrial forming processes augmented with laboratory forming experiences.

540. Photography for Teachers (3)
Six hours of laboratory.
Designed for more mature students to learn photographic skills useful in teaching. Not open to students with credit in Industrial Arts 140 or Journalism 350.

542. Advanced Photography (3) I, II
Six hours of laboratory.
Prerequisite: Industrial Arts 140 or 540.
A consideration of advanced negative control, projection printing techniques, composition and editorial content, architectural and illustrative photography, and flood photoflash techniques.

553. Construction Woodworking (3) I, II
Six hours of laboratory.
Prerequisite: Industrial Arts 351.
Residential building construction techniques and advanced machine operations.

563. Industrial Control Circuits (3)
Six hours of laboratory.
Prerequisite: Industrial Arts 361.
Advanced problems in industrial electronics circuit development, analysis, theory and application.

573. Power Systems Accessories (3) I, II
Six hours of laboratory.
Prerequisite: Industrial Arts 371.
Study of accessory power systems and technological innovations in education and power related industries.

583. Industrial Arts Graphic Arts (3)
Six hours of laboratory.
Prerequisite recommended: Industrial Arts 381.
Advanced techniques in developing skills involved in graphic arts facilities.

596. Experimental Topics in Industrial Arts (1 or 2)
Prerequisite: Consent of instructor.
Individual laboratory work on complex projects on an experimental basis. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units.

GRADUATE COURSES
Refer to the Graduate Bulletin.
Interdisciplinary Programs

For information on additional interdisciplinary programs, refer to this section of the catalog under the headings of American Studies, Asian Studies, Family Studies and Consumer Sciences (Child Development), Humanities (European Studies), Latin American Studies, Liberal Studies, and Social Science.

Advising

All College of Arts and Letters majors are urged to consult with their department adviser as soon as possible; they are required to meet with their department adviser within the first two semesters after declaration or change of major.

African Studies Minor
Dr. Ross E. Dunn, History Department, is adviser for this minor.
The minor in African Studies consists of a minimum of 15 units, 12 of which must be upper division, to include History 475A and 475B, Humanities 158, and six units from the following courses in any two departments: Anthropology 449*, Geography 335*, Political Science 384*, and Religious Studies 340*.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

* Additional prerequisites may be required for these courses.

Minor in Environment and Society
Dr. Warren Johnson, Department of Geography, is adviser for this minor.
The minor in environment and society* consists of a minimum of 15 units to include nine units selected from Biology 420, Economics 452, 453 or 555, and Geography 370 or 371; and six units selected from Anthropology 428, Biology 420, 525, 526, Economics 452, 453, 454, 455, 555, Geography 370, 371, 570, 574, 575, 576, History 340, 540, Political Science 334, 335, Sociology 350. Recommended: Geological Sciences 303, Physics 301.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

* Additional prerequisites required for the courses in the minor.

Gerontology Minor
Dr. Shirley A. Lockery, University Center on Aging, is adviser for this minor.
The minor in gerontology consists of a minimum of 18 units to include Health Science 573, Psychology 335, Sociology 527, and nine units selected from Anthropology 509, Biology 473, Family Studies and Consumer Sciences 496 "Aging in the Family," Recreation 580, Social Work 120, Sociology 528, 596 "New Views on Aging," and "Images of Aging in Film," Women's Studies 421, or Communicative Disorders 596 "Communication Problems of the Aged," General Studies 502 (when content relevant to aging).

Additional prerequisites may be required for the courses in the minor.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

Jewish Studies Minor
Dr. Ita G. Sheres, Department of English and Comparative Literature, is adviser for this minor.
The minor in Jewish Studies provides a balanced interdisciplinary study of Jewish contributions to world culture and history. It serves the needs of students who plan to (1) specialize in disciplines in which an understanding of Jewish contributions is essential, or (2) follow careers in teaching, community service, foreign service, or the ministry. Students seeking a minor in Jewish Studies may want to consider combining it with a major in Social Science with an emphasis on Africa and the Middle East. Many courses relevant to this major are available in anthropology, economics, geography, history, political science, and sociology.

The minor in Jewish Studies consists of 18 to 22 units to include Humanities 130 and 131, or Hebrew 101, 102 and 296, and 12 units selected from Comparative Literature 405 (English 405), 526, 571 (Legend and Mysticism), 577 (Kafka), History 498 (Jewish History), Philosophy 338*, 595*, Religious Studies 496 (Hasidism and Jewish Mysticism), 598* (Martin Buber). Relevant courses not here listed may apply with the minor approval of the Coordinator of Jewish Studies. The 12 upper division units are to be taken in no more than two departments.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

* Additional prerequisites required for these courses.

Middle East Studies Minor
Dr. Ross E. Dunn, History Department, is adviser for this minor.
The minor in Middle East studies consists of a minimum of 15 units, 12 of which must be upper division, to include Humanities 157, Religious Studies 340*, six units from History 473A, 473B and 574, and three units from Anthropology 474*, Art 365*, Comparative Literature 535, and Political Science 383.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

* Additional prerequisites may be required for these courses.

Russian and East European Studies Major
With the A.B. Degree in Liberal Arts and Sciences
Dr. Vyta Dukas, Department of German and Russian Languages and Literatures, is adviser for this major.

Preparation for the major. Russian 101, 102, 201, 202, or equivalent. (17 units.) Lower division prerequisites for the upper division courses to be taken in the major. (3-9 units.)

Foreign Language Requirement. The foreign language requirement is automatically fulfilled through course work for preparation for the major.

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 30 upper division units to include nine units from at least two departments in the humanities selected from Comparative Literature 513, 514, Humanities 330, 331, History 518A-518B; nine units from at least two departments in the social sciences selected from Economics 332, Geography 336, 337, Political Science 358, 359, six units in Russian selected from 301, 302, 305A-305B, 555A-555B, 561A-561B, 563, 590, 591; and six units of electives selected with the approval of the adviser.

* Additional prerequisites may be required for these courses.
Italian

In the College of Arts and Letters

Faculty
Emerita: Vergani, L.
Professor: Vergani, G.

Offered by the Department of
French and Italian Languages and Literatures

Minor in Italian

Italian Minor

The minor in Italian consists of a minimum of 15 units in Italian, six units of which must be in upper division courses in the language.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

High School Equivalents

High school foreign language courses may be used for purposes of placement in college courses and may be counted toward meeting the foreign language requirement in various majors. These high school courses will not count as college credit toward graduation.

Secondary school language courses can be used as follows:

1. The first two years of high school level language count as the equivalent of the first semester of a college level course, although students with fewer than three years of high school level language may complete the first semester college course for graduation credit.
2. The first three years of high school level language count as the equivalent of the first two college semesters, although students with fewer than four years of high school level language may complete the second semester college course for graduation credit. Students who have completed three years of foreign language in high school will not receive credit for the first semester college course unless at least five years separate the last high school course and the first college course.
3. Four years of high school level language count as the equivalent of three college semesters, thus fulfilling the foreign language requirement.

LOWER DIVISION COURSES

Native speakers of Italian will not receive credit for taking lower division courses in Italian except with advance approval from the department.

No credit will be given when Italian 100A, 100B, 200, or 301 are taken concurrently or out of sequence. However, Italian 200A and 200B may be taken in any order.

100A. Elementary (5) I, II
Pronunciation, speaking and writing, readings on Italian culture and civilization, essentials of grammar. Not open to students who have completed three years of high school Italian.
(Numbered Italian 101 in academic years 1982-83 and 1983-84.)

100B. Elementary (5) I, II
Prerequisite: Italian 100A or two years of high school Italian.
Continuation of Italian 100A. Not open to students who have completed four years of high school Italian.
(Numbered Italian 102 in academic years 1982-83 and 1983-84.)

200A. Intermediate Grammar and Composition (3)
Prerequisite: Italian 100B or three years of high school Italian.
Comprehensive survey of Italian grammar at the intermediate level. Study of a variety of prose models and practice in writing.

200B. Reading and Speaking Italian (3)
Prerequisite: Italian 100B or three years of high school Italian.
Emphasis on the spoken language with readings of cultural material serving as a basis for discussion.

UPPER DIVISION COURSES

(Reserved for Undergraduates)

All upper division Italian courses are taught in Italian unless otherwise noted.

301. Advanced Oral and Written Composition (3)
Prerequisite: Six units of 200-level Italian.
Grammar review. Reading of modern Italian prose, with written reports and oral discussions in Italian.

305A. Italian Literature (3)
Prerequisite: Six units of 200-level Italian.
Important movements, authors and works in Italian literature from Middle Ages to the Renaissance.

305B. Italian Literature (3)
Prerequisite: Six units of 200-level Italian.
Continuation of Italian 305A from the Renaissance to the present.

496. Selected Topics (1-4)
Topics in Italian language, literature, culture and linguistics. Conducted in English or in Italian. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit eight units.

499. Special Study (1-3) I, II
Prerequisites: Italian 301 and 305A or 305B.
Individual study. Maximum credit six units. This course is intended only for students who are currently enrolled in or who already have credit for all upper division courses in Italian available in any given semester.
Japanese
In the College of Arts and Letters

Faculty
Associate Professor: Higurashi

Offered by the Department of
Classical and Oriental Languages and Literatures
Courses in Japanese.
Major or minor work in Japanese is not offered.

LOWER DIVISION COURSES
Native speakers of Japanese will not receive credit for taking lower division courses except with advance approval from the department.
No credit will be given for Japanese 101, 202, 303, 304 taken out of sequence.

101. Elementary (4) I
Four lectures and one hour of laboratory.
Pronunciation, oral practice, readings on Japanese culture and civilization, minimum essentials of grammar.

202. Elementary (4) II
Four lectures and one hour of laboratory.
Prerequisite: Japanese 101.

296. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

UPPER DIVISION COURSES
(Intended for Undergraduates)

303. Readings in Japanese (4) I
Prerequisite: Japanese 202.
Reading of modern Japanese short stories and essays. Composition and advanced conversation.

304. Readings in Japanese (4) II
Prerequisite: Japanese 303.
Continuation of Japanese 303, with readings in poetry, mainly Haiku.

496. Topics in Japanese Studies (1-4)
Topics in Japanese language, literature, culture and linguistics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit eight units.

499. Special Study (1-3) I, II
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

Journalism
In the College of Professional Studies and Fine Arts

Faculty
Emeritus: Julian, Whitney, Wimer
Chair: Brown
Professors: Broom, Brown, Buckalew, Holowach, Odendahl, Sorensen
Associate Professors: Hartung, Towers
Assistant Professors: Dozier, Spevak, Strickland
Lecturer: Center

Offered by the Department
Master of Science degree in mass communications (in cooperation with other departments).
Major in journalism with the A.B. degree in liberal arts and sciences.
Teaching major in journalism for the single subject teaching credential in English/journalism.
Minor in journalism.

Journalism Major
With the A.B. Degree in Liberal Arts and Sciences

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."

Journalism majors must complete 30 units in journalism, 24 of which must be upper division units. Majors may exceed 30 units only upon petition to the Department of Journalism, but the maximum number of journalism units that will be credited toward the degree for graduation is 33. A maximum of six lower division units in journalism may be applied to the total of 30 units.

A minor is required; however, to preserve an appropriate balance between journalism/mass communication courses and courses in liberal arts and sciences, journalism majors may not minor in telecommunications and film.

Students are required to achieve a passing score on the Department of Journalism grammar, spelling, and punctuation examination before enrolling in journalism skills, activity and laboratory courses.

Emphasis in Advertising
Preparation for the major. Journalism 220. (3 units.)
Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Refer to section of catalog on "Graduation Requirements."

Upper Division Writing Requirement. Departmental screening in Journalism 310 with a grade of C (2.0) or better, or passing the University Writing Examination, or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 24 upper division units in journalism to include Journalism 310, 460, 463, 465, and 466; nine units of upper division electives.

Emphasis in News-Editorial
Preparation for the major. Journalism 220. (3 units.)
Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Refer to section of catalog on "Graduation Requirements."

Upper Division Writing Requirement. Departmental screening in Journalism 310 with a grade of C (2.0) or better, or passing the University Writing Examination, or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 24 upper division units in journalism to include Journalism 310, 326, either 320 and 529 or 441 and 443, 502, nine units of upper division electives.
Emphasis in Photojournalism
Preparation for the major. Journalism 220. (3 units.)

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Refer to section of catalog on "Graduation Requirements."

Upper Division Writing Requirement. Departmental screening in Journalism 310 with a grade of C (2.0) or better, or passing the University Writing Examination, or completing one of the approved writing courses with a grade of C (2.0) or better.

Major: A minimum of 24 upper division units in journalism to include Journalism 310, 350, 450, 451, and 502; nine units of upper division electives.

Emphasis in Public Relations
Preparation for the major. Journalism 220. (3 units.)

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Refer to section of catalog on "Graduation Requirements."

Upper Division Writing Requirement. Departmental screening in Journalism 310 with a grade of C (2.0) or better, or passing the University Writing Examination, or completing one of the approved writing courses with a grade of C (2.0) or better.

Major: A minimum of 24 upper division units in journalism to include Journalism 310, 480, 481, 509, and 585; nine units of upper division electives.

Emphasis in Radio-TV News
Preparation for the major. Journalism 220. (3 units.)

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Refer to section of catalog on "Graduation Requirements."

Upper Division Writing Requirement. Departmental screening in Journalism 310 with a grade of C (2.0) or better, or passing the University Writing Examination, or completing one of the approved writing courses with a grade of C (2.0) or better.

Major: A minimum of 24 upper division units in journalism to include Journalism 310, 470, 474, 475, and 502; nine units of upper division electives.

Journalism Major *
For the Single Subject Teaching Credential in English/Journalism
All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the College of Education. A major in journalism selected by any one of the emphases in journalism may be used by students in teacher education as an undergraduate major for the A.B. degree in liberal arts and sciences.

*The major for the Single Subject Teaching Credential has been submitted to the Commission on Teacher Credentialing. Consult department to verify current program requirements.

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Refer to section of catalog on "Graduation Requirements."

Upper Division Writing Requirement. Departmental screening in Journalism 310 with a grade of C (2.0) or better, or passing the University Writing Examination, or completing one of the approved writing courses with a grade of C (2.0) or better.
350. News and Feature Photography (3)
One lecture and four hours of activity
Prerequisites: Journalism 220, upper division standing.
Principles and practice of photojournalism, including fundamentals of camera operation, composition, developing and printing of black and white photographs for publication. News values in photography. Not open for credit to students with credit in Industrial Arts 140.

408. Mass Communication and Society (3)
Prerequisite: Upper division standing.
Social factors underlying nature, functions of mass media. Theories, models, research in media as culture carriers, opinion shapers; other societal interrelationships. (Formerly numbered Journalism 508.)

425. Editorial and Critical Writing (3)
Prerequisite: Journalism 320.

441. Magazine Article Writing (3)
Prerequisites: Journalism 220, upper division standing.
Planning, gathering material, writing and marketing articles for specialized and general publications. Production of expository articles and marketing of at least one.

442. Magazine Editing and Production (3)
Two lectures and three hours of activity
Prerequisite: Journalism 310.

450. Advanced News and Feature Photography I (3)
One lecture and four hours of activity
Prerequisites: Journalism 310 and 350.
Role of photography in mass communication. Emphasis on photographic essay and innovation in photojournalism. Field and laboratory practice in telling stories with photographs. Information gathering for captions; accuracy, completeness.

451. Photojournalism II (3)
One lecture and four hours of activity
Prerequisites: Journalism 310 and 350.
Advanced techniques of photography and darkroom. Documentary journalism. Experimentation with photo derivation and color photography. Field and laboratory practice in covering news events with still cameras.

460. Principles of Advertising (3)
Prerequisite: Upper division standing.
Principles of advertising, including copywriting, layout, typography, production, social responsibility, consumer and market surveys, and advertising readership studies.

463. Advertising Copy, Layout and Design (3)
One lecture and four hours of activity.
Prerequisites: Journalism 310 and 460.

465. Advertising Research and Analysis (3)
Prerequisites: Journalism 310 and 460.
Evaluation and use of data collecting and measurement for advertising media. Cases, practices and problems. Quantitative and qualitative characteristics of advertising.

466. Advertising Campaigns (3)
Prerequisites: Journalism 463 and 465, or Telecommunications and Film 540.
Cases, practices and problems with advertising campaigns, including political campaigns. Decision making in copy themes, art work, media imagery. Advertising campaign targets. Evaluating results.

470. Radio-Television News Writing (3)
One lecture and four hours of activity
Prerequisites: Journalism 220 or Telecommunications and Film 110, and credit or concurrent registration in Journalism 310.
Special applications of news writing and editing for the broadcast media, including the use of wire copy, film, and audio and video tape recorders in producing news casts. Emphasis on news writing. (Not open to students with credit in Telecommunications and Film 310.)

474. Broadcast News Reporting and Editing (3)
Two lectures and three hours of activity.
Prerequisites: Journalism 310 and 470 or Telecommunications and Film 310. and satisfactory score on departmental grammar, spelling and punctuation examination.
Principles of reporting, photographing, recording in the production of newscasts for broadcast media. Special applications of principles of visual and aural literacy. Social responsibility. Field and laboratory practice.

475. Radio and Television News Production (3)
Two lectures and six hours of activity.
Prerequisites: Journalism 310 and 470 or Telecommunications and Film 310. and satisfactory score on departmental grammar, spelling and punctuation examination.
Radio and television news production with experience in news scripting. Writing and editing. Editing film and taped recorders. Problems and practices in the broadcast editing process. Field and laboratory practice.

480. Principles of Public Relations (3)
Prerequisite: Upper division standing.
Principles, theories, methods and objectives in public relations. Survey of public relations problems and practices.

481. Public Relations Techniques and Media Usage (3)
One lecture and four hours of activity.
Prerequisites: Journalism 310 and 480.
Practical applications of public relations techniques with emphasis on writing and media usage. News releases, publications and printed materials, audio-visual techniques, speeches and special events. Field and laboratory practice.

490. Internship in Journalism (1-3) Cr/NC
Prerequisites: Upper division standing and consent of instructor. Advertising: Journalism 463, News-Editorial: Journalism 320, 441 or 443; Photojournalism: Journalism 450 or 451; Public Relations: Journalism 481; Broadcast News: Journalism 470.
Supervised work with area media under the combined direction of practitioners and professors. Maximum credit three units.

496. Experimental Topics (1-3)
Prerequisite: Consent of instructor.
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Not more than three units in journalism to apply to the degree in journalism.

498. Special Study (1-3)
Prerequisite: Consent of instructor.
Individual study or project, normally in a research area selected by the student. Maximum credit three units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

500. Current Problems in Mass Communication (3)
Prerequisites: Journalism 220, or Telecommunications and Film 100, or Economics 100, or Political Science 101, or Sociology 101, and upper division standing.
Forces affecting American mass communications today: government restrictions, economics, pressure groups, censorship, mechanical developments, interrelationships of the media and society; professional ethics.
Latin American Studies

**In the College of Arts and Letters**

**Faculty**
Latin American Studies is administered by the Latin American Studies Committee. The program draws upon courses offered by faculty in the departments of Anthropology, Art, Economics, Geography, History, Journalism, Mexican-American Studies, Political Science, Public Administration and Urban Studies, Sociology, Spanish and Portuguese Languages and Literatures, and Women's Studies; and the College of Business Administration.

Professor Thomas M. Davies, Jr., is the undergraduate adviser.

**Offered by Latin American Studies**
Master of Arts degree in Latin American studies.
Major in Latin American studies with the A.B. degree in liberal arts and sciences.
Minor in Latin American studies.

**Advising**
All College of Arts and Letters majors are urged to consult with their department adviser as soon as possible; they are required to meet with their department adviser within the first two semesters after declaration or change of major.

**Latin American Studies Major**

**With the A.B. Degree in Liberal Arts and Sciences**

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."

The major provides (1) a basis for a more effective understanding of the cultures and governments of the western hemisphere; and (2) a basic education and training for a business or professional career involving understanding of Latin America.

High school students preparing to enter this program should include in the high school course of study not less than three years of study in one foreign language, preferably Spanish or Portuguese. Proficiency in either of these languages is indispensable to a successful career in this area of study.

**Preparation for the major.** Portuguese 101, 211, 212, or Spanish 101, 102, 201, 202, 211 and 212 with a minimum grade point average of 2.0 for all work attempted (11-21½ units); 12 units selected from Anthropology 101, Economics 101 and 102, Geography 101, History 115A-115B, Latin American Studies 101, Political Science 101 and 103.

**Foreign Language Requirement.** The foreign language requirement for graduation is automatically fulfilled through course work for preparation for the major.

**Upper Division Writing Requirement.** Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

**Major.** A minimum of 36 upper division units selected from courses in anthropology, art, economics, geography, history, Latin American studies, Mexican-American studies, political science, Portuguese, sociology, Spanish and Women's Studies, with not less than 12 units in one field and nine in each of two other fields. At least 33 units must be in courses having Latin American content. The student will file with the Evaluations Office a master plan approved by the adviser for the Latin American studies curriculum.

Courses acceptable for the Latin American studies major include Latin American Studies 498, 499, 580; Anthropology 442*, 443*, 470, 476; Art 561, 562; Comparative Literature 445; Economics 336, 365, 464, 465, 562, 565; Geography 323, 324, 498A, 498B (when relevant); History 415A-415B, 486 (when relevant), 551A-551B, 552, 553, 554, 555, 556, 557, 558; Mexican-American Studies 333, 335, 350A, 376; Political Science 382, 556, 557, 558; Portuguese 535; Sociology 404*, 506*, 519*, 558*; Spanish 306A-306B, 441, 442, 470, 471, 472, 515A-515B, 520, 522, 524, 596* (when relevant); Women's Studies 310 (when relevant); and 499 (when relevant) taken in one of the departments listed above.

* Indicates course with prerequisites not included in requirements listed above.
Latin American Studies Major – Imperial Valley Campus

At the Imperial Valley campus the major in Latin American studies is essentially the same as the Latin American studies major offered at the San Diego campus.

It is designed to provide (1) a foundation of understanding of the history, culture and governments of the countries of Latin America and the multiple interrelationships among those countries, and (2) a basic education and training for a business or professional career involving an understanding of Latin America.

Preparation for the Major.

The lower division preparation for the major can be fulfilled by taking the following courses at Imperial Valley College, or their equivalent:

- Elementary Spanish, Intermediate Spanish or Bilingual Spanish; Intermediate Conversational Spanish or Bilingual Oral Spanish; Advanced Conversational Spanish; and 12 units selected from Physical Anthropology, Physical Geography, History of the Americas, Introduction to Political Science, Comparative Politics, and Civilization of Spanish America and Brazil.

- At the Imperial Valley campus the major in Latin American studies is essentially the same as the Latin American studies major offered at the San Diego campus.

- It is designed to provide (1) a foundation of understanding of the history, culture and governments of the countries of Latin America and the multiple interrelationships among those countries, and (2) a basic education and training for a business or professional career involving an understanding of Latin America.

- Preparation for the Major.

- The lower division preparation for the major can be fulfilled by taking the following courses at Imperial Valley College, or their equivalent:

- Elementary Spanish, Intermediate Spanish or Bilingual Spanish; Intermediate Conversational Spanish or Bilingual Oral Spanish; Advanced Conversational Spanish; and 12 units selected from Physical Anthropology, Physical Geography, History of the Americas, Introduction to Political Science, Comparative Politics, and Civilization of Spanish America and Brazil.

- A minimum grade point average of 2.0 is required for all work attempted.

- Foreign Language Requirement.

- The foreign language requirement for graduation is automatically fulfilled through course work for preparation for the major.

- Upper Division Writing Requirement.

- Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

- Major.

- A minimum of 36 upper division units selected from the courses listed below with not less than 12 units in one field and nine in two other fields. At least 33 units will be courses having Latin American content: Latin American Studies 344, Anthropology 442, Art 496 (when relevant), 561, 562; Comparative Literature 445; Economics 365, 464, 496 (when relevant), 565; Geography 323, 324, 496 (when relevant); History 415A-415B, 496 (when relevant); 538A-538B; 551A-551B, 552, 557, 558; Mexican-American Studies 333, 335, 339A, 376, Political Science 566, 567, 568; Sociology 350, 404, 506, 519; Spanish 306A-306B, 470, 471, 472, 515A-515B, Women's Studies 310 (when relevant).

- Latin American Studies Minor.

- The minor in Latin American studies consists of a minimum of 15 units of Latin American content courses. At least 12 of these units must consist of upper division courses. In addition, students must complete Spanish 201 or the equivalent or Portuguese 211 or the equivalent. No more than six units may be drawn from any one department’s or program’s offerings. The student will file with the Evaluations Office a master plan approved by the adviser for the Latin American studies curriculum. Units may be selected from among the following:

- Anthropology 442, 443, 470, 476, 496, 499; Art 496, 499, 561, 562, Comparative Literature 445; Economics 464, 496, 499, 562, 565; Finance 329; Geography 323, 324, 496, 521, 522; History 115A-115B, 496, 499, 538A, 551A-551B, 552, 553, 554, 555, 556, 557, 558, 596; Latin American Studies 101, 498, 499; Marketing 376; Mexican-American Studies 333, 334, 350A, 376, 496; Music 566; Political Science 382, 496, 499, 566, 567, 568; Portuguese 535; Public Administration 580; Sociology 496, 505, 519, 558; Spanish 306A-306B, 441, 442, 470, 471, 472, 515A-515B, 520, 522, 524, 596; Women's Studies 310 (when relevant), 496.

- Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable. In designing their Latin American studies programs for a minor, students may not include courses drawn from their major department.

* Courses to be included with approval of the undergraduate adviser in Latin American studies.

+ Additional prerequisites may be required for courses in the minor.

LOWER DIVISION COURSE

101. Latin American Heritage (3)

Introduction to Latin American cultures and peoples from an interdisciplinary perspective.
Liberal Studies

For further information regarding Liberal Studies, consult the Office of the Division of Undergraduate Studies.

Liberal Studies Major

With the A.B. Degree in Applied Arts and Sciences and in Liberal Arts and Sciences

The liberal studies major provides three options for students wishing to follow degree programs involving more than one discipline or area of study. Option 1 offers an opportunity to combine three disciplines in a focused program of study. Option 2 permits a more general education with courses chosen from four broad groups and is designed mainly for students planning to enter elementary education. Option 3 is an alternative to Option 2 for students interested in bilingual/bicultural education.

OPTION 1. Liberal Studies in Three Departments with the A.B. Degree in Liberal Arts and Sciences.

The student selects three departments participating in this liberal studies option to provide a cohesive plan not otherwise provided in the regular programs of the university. Approval of the plan must be secured from each of the involved departmental advisers and from the Dean of Undergraduate Studies prior to completion of 90 semester units. If extenuating circumstances have clearly made it impossible for a student to declare a Liberal Studies Option 1 major prior to completion of 90 units, such student should expect to be required to take additional courses for completion of the major. Information regarding participating departments and procedures for application is available from the Division of Undergraduate Studies (265-5841). A special program in Drama, Music and Dance is offered through Liberal Studies.

Preparation for the major. A minimum of two courses (normally defined as six units) in each of the three departments selected in the major must be completed in the lower division as foundation for upper division courses. In departments where lower division offerings are insufficient to meet this requirement, the total minimum upper division requirement may be extended.

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Refer to section of catalog on "Graduation Requirements."

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 36 upper division units selected from three departments, with no fewer than nine units from any one. No courses numbered 296, 496, 499, or 596 may be used for the major.

A minor is not required with this major.

OPTION 2. Liberal Studies in the Multiple Subjects Groups with the A.B. Degree in Applied Arts and Sciences.

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."

A minor is not required with this major.

The Liberal Studies Major Option 2 meets all the requirements for the multiple subjects/diversified major as specified in the Ryan Bill, and is recommended for prospective elementary teachers.

Advising for this major is available at the University Advising Center (CL-107), and in a descriptive booklet available at the bookstore.

Preparation for the major. Fifty-one units distributed as follows:

Group A: English and Speech
1. Composition - Three units selected from Afro-American Studies 120; English 100; Linguistics 100, Mexican-American Studies 111B.
2. Composition - English 200.
3. Speech - Three units selected from Afro-American Studies 140; Mexican-American Studies 111A; Speech Communication 103.
4. Literature - Three units selected from English 220, Comparative Literature 270A, 270B.

Group B: Mathematics and Science
5. Mathematics - Mathematics 210A.
6. Mathematics - Mathematics 210B.

With approval of the mathematics advisor, any of the following pairs of mathematics courses may be substituted for Mathematics 210A, 210B: Mathematics 121, 122, 150, 151, 310A, 310B.

7. Biological Science - Three units (or four including laboratory) selected from Biology 100, 100L, (strongly recommended), Botany 100, 100L; Microbiology 110, 110L; Natural Science 110B, Zoology 100, 100L.

8. Physical Science - Three units (or four including laboratory) selected from Astronomy 101, 109, Geological Sciences 100, 101, Natural Science 102, 102A, 210A, 210B; Physics 103, 103L.

9. Mathematics/Science Elective - Three units selected from any course approved in 7 or 8 above or from the following: Anthropology 101; Chemistry 100; Geography 101; Mathematics 104, 107, 140; Natural Science 103; Physics 107, 201.

Group C: Social Science
10. Global Perspective - Anthropology 102 or Geography 102.

Individual Perspective - Psychology 101.

U.S. Organization - Three units selected from Economics 101, 102; Sociology 101; or an American Institutions course.

Group D: Humanities and Fine Arts
13. Values and Ethics - Three units selected from Philosophy 101, 102, 103; Religious Studies 101.

14. Western Civilization - Three units selected from Art 258, 259; Drama 120; History 105, 106; Humanities 102A, 102B.

Art or Drama - Three units selected from Art 100, 101, 157; Drama 105, 255.

Music - Music 102.

Language or Elective - Three units selected from items 13 through 16 above or from the following: Art 158; Classics 140, Drama 130, Humanities 101, 140, Music 151; or any foreign language course.

Additional Requirements:
1. Health Science 101 or 320.
2. Physical Education 241.

Pattern Requirement:
One three-unit course in the major or preparation for the major must be selected from Afro-American, American Indian, Mexican-American, or Women's Studies courses listed in the Liberal Studies curriculum. Afro-American Studies 120, 140, Mexican-American Studies 111A; 111B do not meet this requirement.

Upper Division Writing Requirement. English 306W (very strongly recommended) or English 500W with a grade of C (2.0) or better.

Major. Thirty-seven units distributed as follows:

Group A. English and Speech
Required - Linguistics 420. (Communicative Disorders credential students ONLY may substitute Communicative Disorders 531.)

Required - Either English 306W (very strongly recommended) or English 500W and three units selected from English 301, 302, 406, 494, 501, Comparative Literature 470.

Group A: Humanities and Fine Arts

Required - Three units in art, drama, or music selected from the following: Art 100 or 101 or any skill course, Music 102.

Electives - Three to six units selected from required courses listed above or from the following: Afro-American Studies 480, American Indian Studies 430, 470; Classics 310, 340, Humanities 401A, 401B, 402A, 402B; Mexican-American Studies 310, 331, 335, 378, 380; Philosophy 301, 310, 329, 334, 338, 350, 351; Religious Studies 301, 305, 318, 340, 350, 353, 354, 363, 401, 403; Women's Studies 351, 356, or any foreign language course.

OPTION 3. Liberal Studies with Bilingual/Bicultural Spanish Emphasis in the Multiple Subjects Groups with the A.B. Degree in Applied Arts and Sciences

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements." A minor is not required with this major.

The Liberal Studies Major Option 3 meets all the requirements for the multiple subjects/diversified major as specified in the Ryan Bill, and is recommended for prospective elementary teachers.

Advising for this major is available at the University Advising Center (CL-107), and a descriptive booklet at the bookstore.

The Liberal Studies Option 3 major is designed to help prepare students to enter the Bilingual Emphasis program of the College of Education. A student majoring in this emphasis will have a good preparation for passing the bilingual competency tests. Merely completing this major however, is no guarantee of passing the entrance exams. In general, students should select those courses which will improve oral and written Spanish language ability, English language proficiency, and cultural awareness and sensitivity. Students should take courses in Spanish when offered, e.g., History taught in Spanish.

Spanish Language Requirement: For entrance into Liberal Studies Option 3 students must demonstrate language knowledge and proficiency equivalent to 12 units of college Spanish (four years high school).

Maximum units in one department: 24 units. Upper division and lower division combined.

Majors and Minor: Mexican-American Studies and Multicultural Education are considered as one department.

Preparation for the major: Fifty-seven units distributed as follows:

Group A: English and Speech (12 units distributed as follows).

1. English Composition - English 100 or Mexican-American Studies 111B.
2. Language - English 200.
4. Literature - Comparative Literature 270A or 270B or English 220.

Group B: Mathematics and Science (13 units distributed as follows).

6. Science - Three units of biological science; plus three units of physical science; one lab must be included from either a. or b. below.
   a. Biological science (three units or four including laboratory).
   b. Physical science (three units or four including laboratory).

Group C: Social Science (12 units distributed as follows).

7. The Global Perspective - Anthropology 102 or Geography 102.
8. United States Organization - Three units selected from History 110A-110B or History 115A-115B or Mexican-American Studies 120A-120B or Mexican-American Studies 141A-141B or Political Science 101, 102.
9. Individual Development - Psychology 101 (or Afro-American Studies 250, or Women's Studies 325 if general education is completed).
10. Social Science elective - Three units selected from any course approved for items 7, 8, 9 above or from the following: Economics 100, 101, 102; Health Science 101; Mexican-American Studies 110B, 115, 140; Sociology 101, 110; Women's Studies 101, 201.

Group D: Humanities and Fine Arts (20 units distributed as follows).

11. Values and Ethics - Philosophy 101 or 102 or 103 or Religious Studies 101.
12. Western Civilization - Drama 120 or History 105 or 106 or Humanities 102A or 102B or Classics 140 or Art 258 or 259.
13. Art - Art 100 or 101 or any skill course, e.g., Art 387.
16. Spanish Language - Spanish 211 and 212 (or higher level course with adviser approval).

Note: Physical Education 241 is required for entrance into the credential program.

Upper Division Writing Requirement. English 306W (very strongly recommended) or English 500W with a grade of C (2.0) or better.

Majors: Thirty-three units selected to include courses specified in Groups A, B, C, D below.

Group A: English and Speech (9-18 units).

Required: English 306W or 500W, Linguistics 420 and 553.

Remaining units selected from Linguistics 524, 551, 552; Mexican-American Studies 331, 396W, 335, 461; Spanish 449, Speech Communication 391, 475.

Group B: Mathematics and Science (5-17 units).

Strongly recommended: Natural Science 412A or 412B.

Remaining units selected from Astronomy 305, Biology 310, 362, Communicative Disorders 321, Geography 378, 505, 507; Mathematics 303, 310A-310B, Microbiology 360; Natural Science 333, 412A or 412B; Oceanography 320; Physics 301; Zoology 314, 330.
Group C: Social Science (6-18 units).
**Required:** Health Science 320 (required unless Health Science 101 has been completed in lower division); Mexican-American Studies 300A or 300B.
Remaining units selected from Geography 320; History 310A-310B or 410A-410B or 538A-538B, 551A-551B; Mexican-American Studies 300, 320, 460, 481; Psychology 330, 340 or Sociology 440; Social Work 350; Sociology 325; Women's Studies 310.

Group D: Humanities and Fine Arts (4-10 units).
**Required:** Spanish 301 (or equivalent knowledge and proficiency).
Remaining units selected from Mexican-American Studies 310, 334, 376, 464A; Spanish 302, 303, 442, 448, 450, 45A-515B.

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**Linguistics**

_in the College of Arts and Letters_

**Faculty**
Emeritus: Elgin, Tidwell
Chair: Webb
Professors: Donahue, Frey
Associate Professors: Bar-Lev, Seright, Underhill, Webb
Assistant Professor: Kaplan
Lecturers: Bardovi-Harlig, Delahuntly, Downing

**Offered by the Department**
Master of Arts degree in linguistics.
Major in linguistics with the A.B. degree in liberal arts and sciences.
Teaching major in linguistics for single subject teaching credential in English.
Minor in linguistics.

**Advising**
All College of Arts and Letters majors are urged to consult with their department adviser as soon as possible; they are required to meet with their department adviser within the first two semesters after declaration or change of major.

**Linguistics Major**

_with the A.B. Degree in Liberal Arts and Sciences_

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."

Students majoring in linguistics must complete a minor in another field approved by the departmental adviser in linguistics. Recommended fields include anthropology, communicative disorders, ethnic studies, a foreign language, history, journalism, literature, philosophy, psychology, public administration and urban studies, sociology and speech communication.

**Preparation for the major.** Linguistics 101 (3 units.)

Students should note that a number of the upper division required and recommended courses listed below have lower division prerequisites, but these prerequisites do not constitute requirements per se for the completion of the major.

**Foreign Language Requirement.** Competency equivalent to that which is normally attained through three college semesters of a foreign language with a B (3.0) average, or the equivalent. Refer to section of catalog on "Graduation Requirements."

**Upper Division Writing Requirement.** Passing the University Writing Examination or Linguistics 396W, English 305W or 500W with a grade of C (2.0) or better.

**Major.** A minimum of 24 upper division units is required: at least 15 of these must be in Linguistics (and those 15 must include Linguistics 521 and 522); a maximum of nine units may be selected from Afro-American Studies 360, 362, 363; American Studies 501; Anthropology 304, 410; Communicative Disorders 305; French 401, 431; German 506, 610; Journalism 505; Philosophy 521, 522, 531; Russian 580, 581; Sociology 422, 424, 440, 557; Spanish 448, 449; Speech Communication 391, 496 (when appropriate); 530, 535. Substitutions may be made at the discretion of the undergraduate adviser.

**Linguistics Major**

_for the Single Subject Teaching Credential in English_

For a description of the single subject teaching credential in English with a major in linguistics, refer to this section of the catalog under English.

*The major for the Single Subject Teaching Credential has been submitted to the Commission on Teacher Credentialing. Consult department to verify current program requirements.*
Minor in Linguistics

The minor in linguistics consists of a minimum of 15 units, 12 of which must be upper division units, and at least 12 of which must be from linguistics. The student must select a specialization from one of the following subject areas. The following courses are appropriate for all subject areas: Linguistics 101, 420, 520, 521, 522, 524, 551, 552. Linguistics 496 and 499 may be appropriate for any area depending on content.

Descriptive and Theoretical Linguistics: Linguistics 523, 525, 550, 560; Anthropology 510; Philosophy 531.


Historical Linguistics: Linguistics 410, 560 (both required).


Linguistics and Foreign Languages (recommended for foreign language majors): Linguistics 410, 450, 550, 553, 560; Anthropology 410.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

Certificate in Applied Linguistics and English as a Second Language (ESL)

The Linguistics Department offers a basic and an advanced Certificate in Applied Linguistics and English as a Second Language (ESL). The basic certificate requires 12 units to include either Linguistics 420 or 520, Linguistics 550, 552, and either Linguistics 524 or 551. Under certain circumstances comparable courses taken at other institutions may count toward the certificate. Such courses must be evaluated and approved by the Certificate advisor. In addition, there is a 15-hour tutoring practicum requirement. In order to enroll, you must contact the certificate advisor in the Department of Linguistics.

Refer to the Graduate Bulletin for information on the advanced certificate.

LOWER DIVISION COURSES

General

101. Introductory Linguistics (3) I, II

Introduction to the principles and practice of modern linguistics as applied to the study of English. Not open to students with credit in upper division linguistics courses.

256. Directed Language Study (3) I, II

Prerequisite: Consent of instructor.

Directed independent study of a foreign language not offered within the course structure at San Diego State University with the aim of acquiring a basic competency in reading, writing, and grammar. No instruction in speaking or understanding the spoken language is included in this course.

296. Experimental Topicals (1-4)

Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

English Composition for International Students

100. English Composition for International Students (3)

Prerequisites: Completion of English Placement Test and Writing Competency requirements. (See Graduation Requirements, I. Competency Requirements, section of this catalog.) PROOF OF COMPLETION OF COMPETENCY PREREQUISITE REQUIRED. Student to bring to first class meeting evidence of one of the following: Test score of 44+ on SAT/TSWE or 18+ on ACT or 7 essay and 150+ total on EPT or proof of having passed the final examination in Academic Skills 110 or credit for Academic Skills 150.

Introduction to college-level written English; attention to English language/grammar needs of non-native speakers of English; grammatical and rhetorical techniques for effective writing. Based in part on study of models of current American writing. Not open to students with credit in Afro-American Studies 120 or English 100 or higher-numbered composition or creative writing course or Mexican-American Studies 111B.

200. Advanced English for International Students (3)

Prerequisites: Completion of English Placement Test and Writing Competency requirements and satisfactory completion of Linguistics 100 or equivalent. PROOF OF COMPLETION OF COURSE AND COMPETENCY PREREQUISITES REQUIRED.

Continuation of Linguistics 100, developing standard written English from wider language experience. Practice and training in the formal and informal language, idioms and practical English phonetics. Exercises based on a variety of dialects, content, and styles. Not open to students with credit in English 200.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

520. Structure of English (3) I, II

The structure of modern English, including the various approaches to linguistic analysis.
GRADUATE COURSES

Refer to the Graduate Bulletin.
Major. A minimum of 24 upper division units selected with approval of the departmental adviser before starting upper division work, including Mathematics 520A, 521A and 534A and one prerequisite sequence chosen from the following: Mathematics 521A-521B, 521A and 573, 530 and 531; 534A-534B, 534A and 535; 541A-541B, 551A and 551B, 550 and 553, 570 and 572. The student must complete an outline for the major and file a copy signed by the adviser with the Evaluations Office.

Mathematics Major

With the B.S. Degree in Applied Arts and Sciences

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements.

A minor is not required with this major.

The purpose of this major is to allow students with a strong interest in the mathematical aspects of a particular science to apply courses in that science to their major. This should provide a good background for employment or graduate work in applied mathematics or in that science.

Preparation for the major. Mathematics 107, 150, 151 and 152. (16 units.)

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 36 upper division units to include Mathematics 520A, 534A; at least nine units selected from Mathematics 336, 340A, 340B, 520B, 521A, 530, 531, 532, 533, 534B; 12 units from a science to which mathematics may be applied (these should be from a single science and must be approved by the B.S. adviser); and nine units of electives in mathematics excluding Mathematics 302, 303, 310A-310B. The student must complete an outline for the major and file a copy signed by the adviser with the Evaluations Office.

In addition the student must complete Mathematics 520A with a grade of C or better prior to enrolling in Mathematics 570, 572, 573, 576, 578, 580, 581, 582, 583, 584, and certain sections of 596.

Emphasis in Applied Mathematics

This emphasis is designed to train the student in those areas of mathematics which may be applied to formulate and solve problems in other disciplines. The program is designed to qualify the student for employment as an applied mathematician, but the graduate should be well prepared for graduate study in pure or applied mathematics.

Preparation for the major. Mathematics 107, 150, 151, 152, 250. (22 units.)

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 36 upper division units to include Mathematics 520A, 521A, 530, 534A, 534B, 541A, 350A or 551A, and 12 units selected from Mathematics 336, 340B, 520B, 531, 532, 541B, 550, 530B or 551B, 561, 570, 572 or 586 (approved by the Applied Mathematics adviser); and three units of electives excluding Mathematics 302, 303, 310A-310B. The student must complete an outline for the major and file a copy signed by the adviser with the Evaluations Office.

In addition the student must complete Mathematics 520A with a grade of C or better prior to enrolling in Mathematics 570, 572, 573, 576, 578, 580, 581, 582, 583, 584, and certain sections of 596.

Auxiliary Area. A minimum of 12 units from an area to which mathematics may be applied. A typical program might be Physics 195, 195L, 196, 196L, 197, 197L; or Chemistry 200, 201, and a course for which these are prerequisite; or Botany 200 and Zoology 200 and courses for which these are prerequisite; or Economics 101, 102, 307, 541. The intent is to train the student in an area in some depth. Some latitude may be allowed in the choice of department and mix of courses, but all programs must be approved by the Applied Mathematics adviser. The 12-unit requirement is minimal, and a minor in an approved field is highly recommended.

Emphasis in Computer Science

Preparation for the major. Mathematics 107, 108, 137, 150, 151, 152. (23 units.)

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing course with a grade of C (2.0) or better.

Computer Science Minor

The minor in computer science consists of a minimum of 18-24 units in mathematics to include Mathematics 107, 108; and at least 12 upper division units from the courses listed below; or at least nine upper division units from the courses listed below if the student completes a full calculus sequence, i.e., Mathematics 121, 122, or 150, 151, or 141, 142. The courses selected are subject to the approval of the minor adviser.

Mathematics 371, 541A, 570, 572, 573, 574, 575, 576, 578, 580 and 596.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.
Mathematics Minor

The minor in mathematics consists of a minimum of 20-22 units in mathematics to include 12 upper division units, at least six of which have as prerequisite Mathematics 151 or 142: or Mathematics 152 and nine upper division units in mathematics, at least six of which have as prerequisite Mathematics 151 or 142. The courses selected will be subject to the approval of the minor adviser.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

Mathematics Placement Examinations

All students who expect to enroll in Mathematics 104, 106, 107, 119, 120, 121, 140, 150 or 250, and have not completed prerequisite courses at San Diego State University must take the mathematics placement tests. These tests may be used to satisfy all or part of the prerequisite requirements for these courses and they also serve as a basis for the selection of students for the mathematics honors program. The schedule for these examinations will be posted on the mathematics bulletin board. Provision is also made for these examinations to be taken by the entering freshman or the transfer student prior to registration. Refer to the calendar.

LOWER DIVISION COURSES

104. Trigonometry (2) I, II
Prerequisites: Credit in plane geometry in either high school or college combined with intermediate algebra and qualification on the Mathematics Placement Examination. Mathematics 104 may be taken concurrently with Mathematics 140.
Basic concepts of analytic trigonometry.

106. Introduction to Computer Programming with FORTRAN (3) I, II
Prerequisites: Satisfaction of the Entry-Level Mathematics Examination, intermediate algebra and qualification on the Mathematics Placement Examination.
Introduction to problem solving on a computer, design of algorithms, and use of FORTRAN language. Extensive programming.

107. Introduction to Computer Programming (3) I, II
Prerequisites: Satisfaction of the Entry-Level Mathematics Examination, intermediate algebra and qualification on the Mathematics Placement Examination.
Introduction to machine and data organization; the rudiments of job control; design and analysis of algorithms, flowcharts. Extensive programming of problems on the computer in PASCAL.

108. Intermediate Computer Programming (3) I, II
Prerequisites: Satisfaction of the Entry-Level Mathematics Examination, intermediate algebra and Mathematics 107.
Further training in program design and development, especially with regard to larger projects. More complete presentation of a programming language. Basic data structures and algorithms.

118. Topics in Mathematics (3)
Prerequisites: Two years of high school mathematics and satisfactory completion of mathematics courses. Competency requirements. Proof of completion of prerequisites required.
Topics selected from algebra, analysis, geometry, logic, probability, or statistics, designed to give student insight into structure of mathematical theories and their applications. Not open to students with credit in Mathematics 140 or higher numbered courses.

119. Elementary Statistics for Business (3) I, II
Prerequisites: Two years of high school mathematics and satisfaction of the Entry-Level Mathematics Examination, intermediate algebra and qualification on the Mathematics Placement Examination.
Descriptive statistics: histogram, frequency polygon measures of central tendency and variability. Elementary probability and sampling distributions, including binomial, Normal, Bayes theorem. Point and interval estimation of means, proportion. Not open to students with credit in Mathematics 250. Students with credit or concurrent registration in another statistics course other than Mathematics 250 will be awarded a total of four units for the two (or more) courses.

120. Mathematics for Business Analysis (3) I, II
Prerequisites: Two years of high school mathematics and satisfaction of the Entry-Level Mathematics Examination, intermediate algebra and qualification on the Mathematics Placement Examination.
Basic mathematics for business students, including topics from finite mathematics and calculus.

121. Calculus for the Life Sciences I (3) I, II
Prerequisite: Satisfaction of the Entry-Level Mathematics Examination, intermediate algebra and qualification on the Mathematics Placement Examination.
Basic concepts of differential calculus with life science applications. Not intended for physical science or engineering majors. Not open to students with credit in Mathematics 141 or 150.

122. Calculus for the Life Sciences II (3) I, II
Prerequisite: Mathematics 121.
A continuation of Mathematics 121 with topics from integral calculus and an introduction to elementary differential equations. Not open to students with credit in Mathematics 141 or 150.

137. Machine Organization and Assembly Language (4) I, II
Prerequisites: Satisfaction of the Entry-Level Mathematics Examination and Mathematics 108.
General concept of machine and assembly languages, including data representation, looping and addressing techniques, subroutine linkages and use of system and programmer-defined macros.

138. Higher Level Languages (1-2)
Prerequisites: Satisfaction of the Entry-Level Mathematics Examination and Mathematics 107.
Syntax and semantics of a given high level language. Units will depend on language. Programs will be run on computer. Possible languages include FORTRAN, COBOL, ALGOL, PL/I, LISP, SNOBOL, APL. Simulation languages. See Class Schedule for current offering. Maximum credit six units.

140. College Algebra (3) I, II
Prerequisites: Satisfaction of the Entry-Level Mathematics Examination, intermediate algebra and qualification on the Mathematics Placement Examination.
Functional notation, mathematical induction, complex numbers, DeMoivre's theorem, inequalities, binomial theorem, determinants, etc. Not open to students with credit in Mathematics 141 or 150.

141. Calculus for the Social Sciences (4) I, II
Prerequisites: Satisfaction of the Entry-Level Mathematics Examination and Mathematics 140 at this University or qualification on the Mathematics Placement Examination.
Types of functions and their graphs, especially those arising from social and behavioral models: trigonometry, single variable calculus, including techniques of integration, differentiation, and optimization. Not open to students with credit in Mathematics 121 or 150.

142. Calculus for the Social Sciences (4) I, II
Prerequisite: Mathematics 141.
Matrix and vector algebra, and linear systems of equations and inequalities; multivariate calculus, including optimization methods; elementary techniques for solution of differential and difference equations. Not open to students with credit in Mathematics 122 or 151.

149. Introductory Matrix Algebra (3)
Prerequisite: Mathematics 140.
Matrices, vectors, linear dependence and independence, basis, change of basis, similarity and congruence. Applications to systems of equations, characteristic values and orthogonality.

150. Single Variable Calculus (3) I, II
Prerequisites: Mathematics 104 and 140 at this University, with minimum grade of C, or qualification on the mathematics placement examination.
Concepts and techniques of one variable calculus. Differentiation and integration of algebraic, logarithmic, exponential, trigonometric and inverse trigonometric functions of one variable, with applications.
151. Calculus and Analytic Geometry (4) I, II
Prerequisite: Mathematics 150 with minimum grade of C.
Plane analytic geometry, polar coordinates, parametric equations in the plane, techniques of integration, indeterminate forms, improper integrals, Taylor’s formula and infinite series.

152. Multivariable Calculus (4) I, II
Prerequisite: Mathematics 151 with minimum grade of C.
Concepts and techniques of several variable calculus. Partial differentiation and multiple integration with applications. Analytic geometry and vectors in three dimensions. Line integrals and Green’s Theorem, differential equations.

210A. Structure and Concepts of Elementary Mathematics (3) I, II
This course or its equivalent is required for students working toward a teaching credential in elementary education.
Prerequisites: Two years of high school mathematics and satisfaction of the Entry-Level Mathematics Examination and Mathematics Competency requirements. Proof of completion of Competency prerequisite required.
Sets and relations, functions, the development of the number system from the natural numbers, including the whole numbers, the integers, the rational numbers and the real numbers.

210B. Structure and Concepts of Elementary Mathematics (3) I, II
This course or its equivalent is required for students working toward a teaching credential in elementary education.
Prerequisites: Satisfaction of the Entry-Level Mathematics Examination and Mathematics Competency requirements and Mathematics 210A. Proof of completion of Competency prerequisite required.
Elementary number theory and congruences, metric and nonmetric geometry, introduction to logic, probability and statistics and some concepts from algebra.

250. Basic Statistical Methods (3) I, II
Prerequisites: Satisfaction of the Entry-Level Mathematics Examination and qualification on the Mathematics Placement Examination.
Descriptive statistics: histogram, measures of central tendency and variability; sampling distributions. Estimation and hypothesis tests for means, proportions, variances. AOV models, linear regression and correlation, nonparametric methods. Not open to students with credit in Mathematics 119. Students with credit or concurrent registration in another statistics course of similar content. Limit of nine units of any combination of 250, 350A, 350B courses applicable to a bachelor’s degree.

296. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor’s degree.

299. Special Study (1-3)
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Intended for Undergraduates)

302. Basic Mathematical Concepts (3) I, II
Prerequisite: Mathematics 150.
An examination of the concepts of secondary school mathematics from the teacher’s point of view.

303. History of Mathematics (3) I, II
Prerequisite: Mathematics 121 or 140.
History of mathematics down to early modern times.

310A-310B. Modern Elementary Mathematics (3-3)
Prerequisite: Mathematics 210B or qualification on Mathematics Education Placement Test. Mathematics 310A is prerequisite to 310B.
Integers, rationals, and real numbers as mathematical systems; operations, mappings, properties of relations; coordinate geometry; mensuration. Enrollment limited to those in training for or engaged in teaching in the elementary schools.

314. Mathematics Curriculum and Instruction (3)
Prerequisite: Mathematics 151.
Principles and procedures of mathematics instruction in secondary schools. Investigation and development of mathematics curriculum.
Designed especially for secondary and postsecondary teachers and teacher candidates. This course cannot be used as part of the major or minor in the Department of Mathematical Sciences with the exception of the major for the single subject teaching credential.

336. Introduction to Mathematical Modeling (3) I
Prerequisite: Mathematics 122 or 142 or 152.
Models from the physical, natural and social sciences including population models and arms race models. Emphasis on classes of models such as equilibrium models and compartment models. Not open to students with credit in Mathematics 536.

340A-340B. Methods of Applied Mathematics (3-3) I, II
Prerequisite: Mathematics 152. Mathematics 340A is prerequisite to 340B.
Selected topics from ordinary differential equations, with applications, hyperbolic, elliptic, Bessel and gamma functions, Fourier series and integrals, electromechanical analogies, the Laplace transform, and partial differential equations. Mathematics 340A is not open to students with credit in Mathematics 530; Mathematics 340B is not open to students with credit in Mathematics 531.

345C. Methods of Applied Mathematics 3
Prerequisite: Mathematics 340B.
Selected topics from applied mathematics, with applications. May be repeated with new content.

350A. Statistical Methods (3) I
Prerequisite: Mathematics 119 or 250 or equivalent statistics course.
One- and two-sample hypothesis tests, paired difference tests, tests for variances, analysis of variance. Linear regression and correlation. Chi-square tests. Simple nonparametric tests. The power of hypothesis tests.

350B. Statistical Methods (3) II
Prerequisite: Mathematics 350A.
Multiple regression, factorial models and nonparametric methods, all with emphasis on applications.

371. Discrete Mathematics, with Computer Applications (3)
Prerequisite: Mathematics 122 or 142 or 151.
Equivalence and order relations, Boolean algebra, finite machines and their optimization, logical design.

496. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor’s degree.

498. Directed Readings in Mathematics Literature (1)
Prerequisite: Credit or concurrent registration in the upper division mathematics course in which readings are to be undertaken.
Individually directed readings in mathematics literature. May be repeated for a maximum of three units, taken each time from a different instructor.

499. Special Study (1-3) I, II
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

510. Introduction to the Foundations of Geometry (3) II
Prerequisite: Mathematics 122 or 142 or 151.
The foundations of Euclidean and hyperbolic geometries. Highly recommended for all prospective teachers of high school geometry.
511. Projective Geometry (3) I
Prerequisite: Mathematics 122 or 142 or 151 and consent of instructor. Concurrency of lines, collinearity of points and other properties of figures not altered by projections; construction and study of ellipses, hyperbolas, and parabolas by means of projections.

512. Non-Euclidean Geometry (3)
Prerequisite: Mathematics 122 or 142 or 151. History of attempts to prove the fifth postulate; emphasis on plane synthetic hyperbolic geometry; brief treatment of other types of non-Euclidean geometry.

520A. Linear Algebra (3) I, II
Prerequisite: Mathematics 142 or 152. A study of linear equations, Euclidean spaces, linear transformations, matrices, determinants, and eigenvalues.

520B. Applied Linear Algebra (3)
Prerequisite: Mathematics 520A. Jordan forms, vector and matrix norms, condition numbers, generalized inverses, linear programming, analysis of a few standard algorithms in linear algebra.

521A-521B. Modern Algebra (3-3) I, II
Prerequisites: Mathematics 142 or 152. Mathematics 521A is prerequisite to 521B. Selected topics from modern algebra to include an introduction to the theory of groups, theory of equations, and finite mathematics.

522. Number Theory (3)
Prerequisite: Mathematics 142 or 152. Selected topics from the theory of numbers to include congruences, Diophantine equations, and a study of prime numbers.

523. Mathematical Logic (3)
Prerequisite: Mathematics 142 or 151 or Philosophy 120. The logical rules of proof governing sentential connectives and the universal and existential quantifiers with applications. Not open to students with credit in Philosophy 521.

530. Differential Equations (3) I, II
Prerequisite: Mathematics 142 or 152. Ordinary differential equations with applications to geometry, physics and chemistry. Not open to students with credit in Mathematics 340A.

531. Partial Differential Equations (3)
Prerequisite: Mathematics 530. Study of boundary-initial value problems via separation of variables, eigenfunction expansions, Green's functions, and transform methods. Introductory material includes uniform convergence, divergence theorems and Fourier series. Not open to students with credit in Mathematics 340B.

532. Functions of a Complex Variable (3)
Prerequisite: Mathematics 142 or 152. Analytic functions, Cauchy-Riemann equations, theorem of Cauchy, Laurent series, calculus of residues.

533. Vector Analysis and Differential Geometry (3)
Prerequisite: Mathematics 142 or 152. Vector algebra, differentiation and integration, classical theory of curves and surfaces, divergence theorem, Stokes' theorem and related integral theorems, curvilinear coordinates, elements of tensor analysis. Applications to geometry and physics.

533A. Advanced Calculus I (3) I, II
Prerequisite: Mathematics 142 or 152. Properties of the real numbers, continuity and differentiability of functions of one real variable, the Riemann integral, infinite series, uniform convergence.

533B. Advanced Calculus II (3) I, II
Prerequisite: Mathematics 534A. Functions of several real variables; continuity and differentiability; transformations, Jacobians, Green's and Stokes theorems.

534A. Advanced Calculus I (3) I, II
Prerequisite: Mathematics 142 or 152. Topological spaces, functions, mappings, and homeomorphisms. Connectivity, compactness, and metric spaces.

534B. Advanced Calculus II (3) I, II

550. Probability (3)
Prerequisite: Credit or concurrent registration in Mathematics 152. Definitions, computation of probability by enumeration of the cases, discrete and continuous random variables, density functions, moments, limit theorems, selected distributions.

551A. Mathematical Statistics (3) I, II
Prerequisite: Mathematics 142 or 152. Probability models in the theory of statistics, sampling distributions with applications in statistical inference.

551B. Mathematical Statistics (3) II
Prerequisite: Mathematics 551A. Point and interval estimation and hypothesis testing in statistical models with applications to problems in various fields.

552. Applied Time Series Analysis (3) I
Prerequisite: Mathematics 551B. Computation and statistical analysis relative to time series arising in economics, engineering and biomedical research. Box-Jenkins methodology. Robust and nonparametric techniques.

553. Stochastic Processes (3)
Prerequisite: Mathematics 550. Introduction to stochastic processes with selected applications.

554. Computer Oriented Statistical Analysis (3)
Prerequisite: Mathematics 350A. Using statistical computer packages such as SPSS and BMDP to analyze problems involving experimental data.

561. Applied Graph Theory (3)
Prerequisite: Mathematics 520A. Undirected and directed graphs, trees, Hamiltonian circuits, classical problems of graph theory including applications to linear systems.

562. Optimization Theory (3) I
Prerequisite: Mathematics 520A. Transformation of optimization problems, sequential optimization, Lagrange multipliers, linear programming and duality, calculus of variations, and optimal control theory. Sample applications and numerical implementation of the techniques covered.

570. Data Structures (3)
Prerequisite: Mathematics 108. Basic concepts of data. Linear lists, strings, arrays, and orthogonal lists. Representation of trees and graphs. Multilinked structures.

572. Programming Languages (3)
Prerequisite: Mathematics 108. Formal definition of programming languages including specification of syntax and semantics. Structure of algorithmic languages. Special purpose languages.
573. Automata Theory (3) II
Prerequisite: Mathematics 371 or 521A.
Definition and algebraic description of finite automata. Reduced forms for sequential machines. Regular sets and expressions. Introduction to context-free languages.

574. Introduction to Computability (3)
Prerequisite: Mathematics 371 or 523.
Definition of algorithm by abstract (Turing) machines and by recursion. Application of this definition to the limitations and capabilities of computing machines. Applications to logic, algebra, analysis.

575. Compiler Construction (3)
Prerequisites: Mathematics 570 and 572.

576. Artificial Intelligence (3) II
Prerequisite: Mathematics 371 or 523.

577. Probability and Statistics (3) I
Prerequisite: Mathematics 142 or 151.
Probability, measures of central tendency and dispersion, characteristics of frequency functions of discrete and continuous variates; applications. Highly recommended for all prospective secondary school teachers of mathematics.

578. Algorithms and Their Analysis (3)
Prerequisite: Mathematics 570.
Algorithms for solving frequently occurring problems. Sorting, merging, fast matrix multiplication, graph problems (e.g., finding shortest paths), the assignment problem and others.

579. Combinatorics (3)
Prerequisite: Mathematics 122 or 142 or 151.
Permutations, combinations, generating functions, recurrence relations, inclusion-exclusion counting. Polya's theory of counting, other topics and applications.

580. Systems Programming (3) I, II
Prerequisites: Mathematics 137 and 570.
Review of batch process systems programs, their components, operating characteristics, user services and their limitations. Implementation techniques for parallel processing of input/output and interrupt handling. Details on addressing techniques, core management, system updating, documentation and operation. (Formerly numbered Mathematics 557.)

581. Small Computers (3)
Prerequisite: Mathematics 137.
Organization and application of minicomputers. Hands-on experience with minicomputers. Software aspects of and several detailed descriptions of popular minicomputers. Presentation of several microcomputers.

582. Database Theory and Implementation (3) I, II
Prerequisites: Mathematics 371 and 570.
Abstract data structures and techniques for their implementation. Review of sentential and predicate logic, relational view of data, relational calculus and algebra, normalization of relations; hierarchical and network views of data; review of some existing database systems (chosen from ADABAS, DBTG, IMS, S2000, TOTAL); data security and integrity.

583. Computer Simulation (3) I, II
Prerequisites: Mathematics 350A and 541A.
Methodology of simulation for discrete and continuous dynamic systems. State-of-the-art programming techniques and languages. Statistical aspects of simulation. Students will design, program, execute and document a simulation of their choice.
Mexican-American Studies
In the College of Arts and Letters

Faculty
Chair: Vega
Professors: Griswold del Castillo, Vega
Associate Professors: Cuellar, Gonzalez, Rodriguez, Villarino

Offered by the Department
Major in Mexican-American studies with the A.B. degree in liberal arts and sciences.
Minor in Mexican-American studies.

Advising
All College of Arts and Letters majors are urged to consult with their department adviser as soon as possible; they are required to meet with their department adviser within the first two semesters after declaration or change of major.

Mexican-American Studies Major
With the A.B. Degree in Liberal Arts and Sciences
All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."
A double major is strongly recommended for students majoring in Mexican-American studies.

Preparation for the major. Mexican-American Studies 110A-110B, (6 units.)

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Students majoring in Mexican-American studies must complete a minor in another field approved by the adviser in Mexican-American studies.

Preparation for the major. Mexican-American Studies 110A-110B, (6 units.)

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Students majoring in Mexican-American studies must complete a minor in another field approved by the adviser in Mexican-American studies.

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 24 upper division units to include Mexican-American Studies 301 and 21 units selected from: (social sciences) Mexican-American Studies 303, 304, 306, 320, 324, 334, 350A-350B, 360, 481, 484; or 21 units selected from: (humanities) Mexican-American Studies 310, 324, 333, 334, 335, 376, 380, 396W, or 21 units selected from: (bilingual systems) Mexican-American Studies 460, 461, 464A-464B, or 466, 480, 483. Up to nine units, with appropriate content, can be applied to each area of specialization from Mexican-American Studies 496, 497 and 499.

Mexican-American Studies Minor
The minor in Mexican-American studies consists of a minimum of 18 units in Mexican-American studies to include Mexican-American Studies 110A-110B and 12 units of upper division courses selected from any one of the following three areas in Mexican-American studies: (social sciences) Mexican-American Studies 301, 303, 304, 306, 320, 324, 334, 350A-350B, 360, 481, 484; (humanities) Mexican-American Studies 310, 333, 334, 335, 376, 380, 396W; (bilingual systems) Mexican-American Studies 460, 461, 464A-464B, 466, 480, 483.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

Mexican-American Studies Minor — Imperial Valley Campus

LOWER DIVISION COURSES
110A-110B. Introduction to Mexican-American Studies (3-3)
Introduction to the culture and the civilization of the Mexican American. Semester I: History; Mexican and U.S. roots: the new identity. Semester II: Contemporary problems; social and political movements.

119A. Oral Communication (3)
Training in the process of oral (speech) expression: addressing the barrier; formal delivery. Mexican-American Studies 111A is equivalent to Speech Communication 103. Not open to students with credit in Afro-American Studies 140 or Speech Communication 103 or 104.

119B. Written Communication (3)
Preparation for the major. Mexican-American Studies 111A is equivalent to English 100. Not open to students with credit in English 100 or higher-numbered composition or creative writing course or Afro-American Studies 120 or Linguistics 100.

115. Mexican American in Transition (3)
Modern Chicano social problems recognizing the sociological factors involved. Emphasis on scientific method of approach. Evaluation of various causes and solutions of problems of the Chicano. Mexican-American Studies 115 is equivalent to Sociology 110.

120A-120B. The Mexican-American Role in the American Political System (3-3)
Semester I: Relationship between the Mexican-American community and the American political system. Semester II: The Mexican American in relation to his city, county, and state institutions in California. This year course meets the graduation requirement in American Institutions.

130. Mexican Literature in Translation (3)
Contemporary Mexican prose and poetry in translation.

140. History and Sociology of Racism (3)
Survey and analysis of majority group racism and its effects upon minority ethnic groups and society.

141A-141B. History of the United States (3-3)
Emphasis on Spanish and Mexican influences. Semester I: U.S. expansion to 1848. Semester II: 1848 to the present. The Treaty of Guadalupe Hidalgo; history of Mexican immigration; farm labor and urban Chicano history; contemporary movements. This year course meets the graduation requirement in American Institutions.

256. Ballet Folklorico (3)
One lecture and four hours of activity.

Survey of traditional dance from pre-Columbian times to the present. Relationship between indigenous, Spanish and contemporary Danza Folklorica.

296. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.
UPPER DIVISION COURSES
(Intended for Undergraduates)

301. Political Economy of the Chicano People (3)
Prerequisite recommended: Mexican-American Studies 110A-110B.
Political and economic roots of the oppression and exploitation of the Chicano from histori-
cal, institutional and theoretical points of view. Parallels between the experience of the Chicano and other Hispanic groups.

303. Barrio Studies (3)
Prerequisite recommended: Mexican-American Studies 110A or 110B.
Sociological and practical analysis of barrio problems and agencies. Observation in formal agencies for experience and sensitizing. Community fieldwork and application of theory.

304. Narcotics in the Mexican-American Community (3) I, II
Prevention and cure of drug problems; old and new methods; formal and informal agencies explored.

306. Immigration Law and Practices (3)
Legal and political status of the immigrant from Mexico, process of immigration, counseling the immigrant.

310. Mexican and Chicano Music (3) I, II
Music of Mexico and the Southwest including folk dances appropriate for children and adults. Emphasis on the corrido, its history and development in Mexico and the U.S. Course will be taught bilingually.

320. Mexican-American Life Styles (3)
The Mexican-American family in the past, present, and future. Traditional and evolving roles of the man and the woman. The new alternatives in the twentieth century.

324. Gramática Cantada (Pedagogía, Música y Cultura) (3)
Methods and materials of Spanish instruction through music of Mexico and the Southwest.

331. Chicano Poetry: Creative Writing (3)
Reading and writing of Spanish-English macaronic verse; a writing workshop in which students are given opportunity to criticize each other’s work. Poetry is the point of departure and goal in sight. Maximum credit six units.

333. Pre-Hispanic Literature (3)
Literature of Nahua and Maya areas in translation studied as literature.

334. Language of the Barrio (3)
Pachuco, calo, and barrio Spanish: a linguistic study.

335. Mexican-American Literature (3)
Ideas, forms, history of significant Mexican-American prose, poetry and other literary genres.

350A-350B. Chicano History (3-3) I, II
Semester I: Review of indigenous origins; Hispanic institutions and northward expansion, the Mexican Republic. Semester II: Early U.S. encroachment and the Mexican-American War, Chicano influences and contributions, the multilingual and multicultural Southwest.

360. Effects of Political and Economic Institutions on the Barrio (3) I
Prerequisite recommended: Mexican-American Studies 301.
Analysis of unique needs within the barrio and their relationship to political and economic institutions; a study of the consumer society, research and theoretical development of alterna-
tive economic modes in a multicultural society.

370. Families in the Southwest: Documents and Methods (3)

376. Mexican-American Culture and Thought (3)
Intellectual history of the Mexican American as a synthesis of different cultural traditions and perspectives. Philosophical concepts from pre-Cortesian times to the present.

420 / Mexican-American Studies

380. Chicano Folklore (3)
Prerequisite recommended: Mexican-American Studies 110A or 110B.
Stories, legends, dichtos, and common practices of the Chicano storytellers of old; analysis of ancient myths and their contemporary manifestations.

396W. Chicano Prose: Creative Writing (3)
A writing workshop. Mutual criticism. Exploration of new form and content in Mexican-
American prose. Satisfies University upper division writing requirement for students who have completed 60 units, fulfilled the Writing Competency requirement, and completed the General Education requirement in Written Communication. Maximum credit six units.

404. Penology and Criminology and the Chicano (3)
The Chicano and the Pacheco and the penal institutions. Who goes to jail and why. Field trips to penal institutions, courtrooms.

460. Bilingual Concepts (3)
Prerequisite recommended: Mexican-American Studies 110A-110B.
Bilingual and multicultural philosophies, exploration of bilingual rationales and exploration of research in the area.

461. Bilingual Linguistics (3)
Prerequisite recommended: Mexican-American Studies 110A or 110B.
Basic elements of linguistics in English and Spanish: definitions and applications. A study of comparative elements in bilingual linguistics. Taught bilingually.

464A-464B. Literature for the Chicano Bilingual Student (3-3)
Semester I: Chicano literature for the preschool, elementary, and junior high bilingual Chicano student; Semester II: Chicano literature for the high school, college, and adult bilingual Chicano student.

466. Bilingual Materials (3)
One lecture and four hours of activity.

468. The Mexican American and the Schools (3) I, II
Prerequisite recommended: Mexican-American Studies 110A or 110B.
The Mexican-American child's experience in the school system from preschool through high school with emphasis on social, intellectual and emotional growth and development.

481. Contemporary Issues and the Chicano Child (3)
Housing and neighborhoods, family structure; Chicano culture; health and medical needs, problems in education, emotional, social and intellectual growth, meaningful school curriculum; measurement and evaluation of academic skills and relationship to the education of urban and rural Chicano child.

483. Rural and Migrant Issues (3)
The Mexican-American rural and migrant student: problems and new programs.

484. Counseling the Mexican-American Student (3)
Motivation counseling at all levels; parent counseling and involvement; recruiting for secondary continuation and college.

496. Selected Topics in Mexican-American Studies (1-3)
Intensive exploration of selected topics in the area of Mexican-American Studies. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 496, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units.

497. Senior Survey in Mexican-American Studies (3)
Survey integrating studies of selected areas of Mexican-American Studies. Senior report will be written.

499. Special Study (1-3)
Prerequisite: Consent of instructor. Individual study. Maximum credit six units.
**Microbiology**

*In the College of Sciences*

**Faculty**
- Emerita: Kelly
- Chair: Moore
- Professors: Baxter, Moore, Steenbergen, Walch
- Associate Professors: Hemmingsen, Phelps

**Offered by the Department**
- Master of Science degree in microbiology
- Master of Arts or Master of Science degree in biology with an emphasis in microbiology
- Major in microbiology with the A.B. degree in liberal arts and sciences
- Major in microbiology with the B.S. degree in applied arts and sciences
- Major in Environmental Health with the B.S. degree in applied arts and sciences
- Single subject teaching credential in life sciences in area of microbiology*

**Prospective majors in the biological sciences should contact their departmental offices regarding impending curricular changes.**

**Microbiology Major**

**With the A.B. Degree in Liberal Arts and Sciences**
All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."

A minor is not required with this major.

**Preparation for the major.** Botany 200, Biology 215 or Mathematics 250, Chemistry 200, 201, 230 or 231, 250 or 251; Mathematics 121 and 122, or 150; Physics 180A-180B and 182A-182B, Zoology 200, (42-44 units.)

**Foreign Language Requirement.** Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. It is recommended that students select French, German or Russian to satisfy this requirement. Refer to section of catalog on "Graduation Requirements."

**Upper Division Writing Requirement.** Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

**Major.** A minimum of 24 upper division units in microbiology and approved related fields to include Microbiology 310, 505, 505L, 540, 540L, and 515 or Biology 503, and Chemistry 361A-361B. Remaining units to be selected from courses in microbiology and approved courses in other biological sciences, chemistry and physics.

**Microbiology Major**

**With the B.S. Degree in Applied Arts and Sciences**
All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."

A minor is not required with this major.

**Preparation for the major.** Botany 200, Biology 215 or Mathematics 250, Chemistry 200, 201, 230 or 231, 250 or 251; Mathematics 121 and 122, or 150; Physics 180A-180B and 182A-182B, Zoology 200, (44-46 units.)

**Upper Division Writing Requirement.** Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

**Major.** A minimum of 36 upper division units in microbiology and approved related fields to include Microbiology 310, 505, 505L, 540, 540L, 510 and 512, or 520, Chemistry 361A-361B, and three of the following courses: Microbiology 515, 525, 535, 560. Recommended Chemistry, 310A, 310B and 567. Remaining courses to be selected from courses in microbiology and approved courses in other biological sciences, chemistry and physics.

**Medical Technology Curriculum**

*In Applied Arts and Sciences*

The curriculum in medical technology, which prepares for the licensed profession of Public Health Microbiologist or Clinical Laboratory Technologist or Bioanalyst, may be obtained by taking the microbiology major with the B.S. degree, but following a modified arrangement of courses. A description of the curriculum follows.

**Public Health Microbiologist.** To fulfill the academic requirements for the certification examination given by the California State Department of Public Health for Public Health Microbiologist, the student should follow the major in microbiology described for the B.S. degree, but should include Microbiology 520, 525, 535, 535L and Zoology 555. Recommended: Microbiology 430A-430B, 515, 535L, Zoology 508 and 526.

**Clinical Technologist.** To fulfill the academic requirements to qualify for the licensing examination given by the State for Clinical Technologist and the certification examination for medical technologists given by the American Society of Clinical Pathologists, the student should follow the major in microbiology described for the B.S. degree, but should include Microbiology 520, 525, 535, 535L, and Zoology 555. Recommended: Biology 570 and 571, Chemistry 567, Microbiology 430A-430B, 515, 535L, Zoology 508 and 526. Upon completion of the degree requirements a one-year training internship at an approved laboratory is required to be eligible for the licensing and/or certification examinations.

**Environmental Health Major**

**With the B.S. Degree in Applied Arts and Sciences**

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."

A minor is not required with this major.

This program is approved by the California State Department of Health. Upon completion of degree requirements and one-year of experience as an Assistant Sanitarian with a local public health department, the graduate will be admitted to the State of California examination for Registered Sanitarian.

**Preparation for the major.** Botany 200; Biology 215 or Mathematics 250; Chemistry 200, 201, 230 or 231, 250 or 251, Mathematics 121 and 122, or 150; Physics 180A-180B and 182A-182B, Psychology 101 or Sociology 101, Zoology 200, (42-44 units.)

**Upper Division Writing Requirement.** Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

**Major.** A minimum of 38 upper division units to include Biology 570; Civil Engineering 555; Microbiology 310, 410A-410B, 420, 430A-430B, 520, Sociology 440 or Psychology 340; Zoology 526. Remaining courses to be selected from among electives approved by the department. The prerequisites for Civil Engineering 555 are waived for students in this major.

**Microbiology Major**

*For the Single Subject Teaching Credential in Life Sciences*

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the College of Education.

This major may be used as an undergraduate major for the B.S. degree in applied arts and sciences.

The program described below is subject to the approval of the Commission on Teacher Preparation and Licensing. For the present time, the program is required for departmental recommendation to the student teaching program of the College of Education.

Candidates for the single subject teaching credential must be recommended for the program of the College of Education by the Biological Science Credential Screening Committee.

**Preparation for the major.** Botany 200, Zoology 200, Biology 215 or Mathematics 250; Chemistry 200, 215, 231, and 250 or 251, Mathematics 121 and 122, or 150; Physics 180A-180B and 182A-182B, (42-44 units.)

**Upper Division Writing Requirement.** Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

**Major.** A minimum of 33-38 upper division units in microbiology and approved related fields to include Microbiology 310, 505, 505L, 540, 540L, and 510 or 520, three of the following courses: Microbiology 515, 525, 535, 560, Biology 400, Chemistry 361A-361B, and one of the following courses: Zoology 503, 510, 535, 570, or 421 and 421L.

*No students will be admitted into this program during the current academic year.
LOWER DIVISION COURSES

110. Microbiology and Man (3) I, II
The biology of microorganisms and their significance in disease, agriculture, sanitation and industry. Not open to biological sciences majors. Fulfills the general education requirement in the natural science area. (Microbiology 110 not applicable to the major.)

110L. Microbiology and Man, Laboratory (1) I, II
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Microbiology 110.
Laboratory exercises designed to complement material presented in Microbiology 110. Fulfills the general education laboratory requirement in the natural science area.

210. Fundamentals of Microbiology (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Chemistry 100 and 130, or 200 and 201. Students with credit in Microbiology 110 may enroll but will receive only one additional unit of credit.
A course for nursing and dietetics majors. Study of the microorganisms of the environment, including the disease-producing organisms, their actions and reactions.

295. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

505. Microbial Physiology (2) I, II
Prerequisites: Microbiology 310, Chemistry 250 or 251, 361A. Physics 180A-180B. Recommended: Physics 182A-182B.
Physiology of selected bacteria, fungi and other microorganisms. Not open to students with credit in Microbiology 320.

505L. Microbial Physiology Laboratory (2) I, II
Six hours of laboratory.
Prerequisite: Credit or concurrent registration in Microbiology 505.
Experimental techniques in prokaryote and bacteriophage genetics.

510. Advanced General Microbiology (2) II
Prerequisite: Microbiology 310 or an introductory course in microbiology and consent of instructor.
Taxonomy, comparative physiology and ecology of representative microorganisms found in various natural environments.

510L. Advanced General Microbiology Laboratory (2) II
Six hours of laboratory.
Prerequisite: Credit or concurrent registration in Microbiology 510.
Methods and procedures for the systematic isolation and characterization of important groups of soil and water bacteria.

515. Bacterial and Viral Genetics (2) I, II
Prerequisites: Chemistry 361A; Microbiology 310.
The genetics of bacteriophages and bacteria.

515L. Bacterial and Viral Genetics Laboratory (2) I, II
Six hours of laboratory.
Prerequisite: Credit or concurrent registration in Microbiology 515.
Experimental techniques in prokaryote and bacteriophage genetics.

520. Pathogenic Bacteriology (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Microbiology 310 with a minimum grade of C; Chemistry 250 or 251. Recommended: Chemistry 361A.
Bacterial and rickettsial agents of disease in man and other animals. Consideration of host-parasite relationships, the biology of the inciting agents and mechanisms of host resistance. Laboratory experience in isolation and identification of bacterial pathogens.
525. Medical Mycology (4) I, II
Two lectures and six hours of laboratory.
Prerequisite: Microbiology 310.
Mycoi agents of disease in human and other animals. Consideration of the biology of fungi; concepts of host-parasite relationships, including factors affecting virulence and immunity. Experience in systematic identification.

530. Hematology (4) I, II
Two lectures and six hours of laboratory.
Prerequisite: Microbiology 310.
The study of normal and pathological blood with chemical, physical, and microscopic methods.

535. General Virology (2) I, II
Prerequisite: Microbiology 310. Recommended: Microbiology 520 and 540.
Viruses, their structure, function, culture, and methods of study.

535L. General Virology Laboratory (2) I, II
Six hours of laboratory.
Prerequisites: Credit or concurrent registration in Microbiology 535.
The culture, isolation, and characterization of viruses.

540. Immunology and Serology (2) I, II
Prerequisites: Chemistry 361A and one upper division biological science course.
Immunchemistry of antigens and antibodies; their interactions in vitro and in vivo. Cellular immune mechanisms. Immunopathologies. Not open to students with credit in Microbiology 330.

540L. Immunology and Serology Laboratory (2) I, II
Six hours of laboratory.
Prerequisites: Microbiology 310 and credit or concurrent registration in Microbiology 540.
Serological and cellular immunological techniques. Not open to students with credit in Microbiology 330L.

560. Marine Microbiology (2) I
Prerequisites: Microbiology 310 or an introductory course in microbiology and consent of instructor.
Microbiological population of estuary and ocean waters; interrelationships with other organisms and the physical and chemical environment.

560L. Marine Microbiology Laboratory (2) I
Six hours of laboratory.
Prerequisite: Credit or concurrent registration in Microbiology 560.

580. Animal Viruses (4) I
Two lectures and six hours of laboratory.
Prerequisite: Microbiology 535. Recommended: Microbiology 520, 535L, 540.
Animal virus identification and investigation, emphasizing cell culture, cytopathic effects and serology.

590. Electron Microscopy (4) II
Two lectures and six hours of laboratory.
Principles and techniques in the biological application of the electron microscope.

596. Selected Topics in Microbiology (1-5)
Prerequisite: Consent of instructor.
Study of specific subject areas. Maximum credit six units to be taken in two different subject areas. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. See Class Schedule for specific content.

GRADUATE COURSES
Refer to the Graduate Bulletin.

Military Science

Faculty
Chair: Kaul
Professor: Kaul
Assistant Professors: Grant, Smith, Spoonbeck, Wells
Lecturers: Bollenbach, Forest, Rader

Offered by the Department
Army ROTC curriculum leading to a commission as a Second Lieutenant in the U.S. Army Minor in Military Science.

Curriculum
The Department of Military Science offers both a four-year and a two-year Army Reserve Officers Training Corps (ROTC) program designed to develop future officers in the areas of leadership, management, foreign policy, national security, military history, and military skills.

Enrollment in the Army ROTC program is not a requirement for taking military science courses.

The Army ROTC program consists of one course per semester along with one leadership laboratory period per month. The four-year program is divided into two parts: the Basic Course and the Advanced Course. The Basic Course is usually taken in the freshman and sophomore years. No military commitment is incurred during this time, and students may withdraw at any time through the end of the second year. The first year consists of one-unit introductory courses each semester. The second year consists of three-unit courses with instruction on Civil-Military Relations and Military Leadership. Uniforms, necessary military science textbooks, and materials are furnished without cost. After completing the Basic Course, students who have demonstrated officer potential and have met physical and scholastic standards are eligible to enroll in the Advanced Course. This course is normally taken in the final two years of college and consists of outlined military science and designated enrichment courses. In addition to the required military science courses, students must complete one course in the area of written communication, human behavior, and military history. Students are also recommended to take a course in management and national security studies.

A paid six-week Advanced Camp is held during the summer between the junior and senior years. This camp permits students to put into practice the principles and theories acquired in the classroom. All students in the Advanced Course receive uniforms, necessary military science textbooks, pay for the Advanced Camp, and a living allowance of up to $1,000 each school year. The Army ROTC program also offers a series of optional adventure outings and on-campus activities during the school year. These include orienteering, rappelling, mountaineering, sports programs, and social activities.

Upon completion of the Advanced Course students are commissioned Second Lieutenants in the U.S. Army. The available options after commissioning are active duty for a minimum of three years or three months active duty for training followed by participation in the U.S. Army Reserve or U.S. Army National Guard.

Several special programs are available for students who have previous ROTC training or active military service. These programs allow for part- or full-placement credit for the Basic Courses. In addition, a program is available for simultaneous participation in both Army ROTC and the Army Reserve or Army National Guard.

Two-Year Commissioning Program
This program offers students the opportunity to be commissioned officers after two years of Army ROTC instead of four years. The program consists of a six-week Army ROTC Basic Camp which qualifies a student for enrollment in the Advanced Course. The two-year program is designed for community and junior college graduates and students of four-year colleges who did not take Army ROTC during their first two years. The Basic Camp course of instruction is designed to provide the necessary military skills and leadership training normally provided during the Basic Course. The Basic Camp is conducted at Fort Knox, Kentucky, and a paid salary, transportation, meals and lodging will be furnished. No military obligation is incurred as a result of Basic Camp attendance.

Cross Enrollment
Students can participate in Army ROTC while attending area community and junior colleges or other four-year area colleges. For further information concerning cross enrollment, contact the Department of Military Science.
Applying for the Program
SDSU students enroll in military science courses by signing up during registration in the same manner as for other University classes. There is no advance application needed for the freshman or sophomore classes. The freshman classes consist of one-unit courses, Military Science 100A and 100B. The sophomore classes consist of Military Science 201 and 202. The Advanced Course classes consist of Military Science 301 and 302 during the first year and Military Science 410 and 411 during the second year. Students need to contact the Department of Military Science to enroll in the Army ROTC program and to receive information on lab schedules and activities.

Students enrolling in other areas of study should contact the Department of Military Science at SDSU for curriculum requirements and application procedures.

Financial Assistance
All students have the opportunity to compete for three- and two-year scholarships. These scholarships cover all tuition, laboratory fees, textbooks, supplies and a $100 monthly subsistence allowance during the school year. These scholarships are competitive nationwide and the initial processing is accomplished by the Military Science department during the spring semester each year. In addition, two-year scholarships are available at the Basic Camp at Fort Knox, Kentucky, where you will be in competition only with the students attending the Basic Camp. Contact the department chair for details.

Military Science Minor
The minor in military science consists of a minimum of 15 units to include Military Science 301, 302, 410, 411, and Sociology 499. (3 units.)

LOWER DIVISION COURSES
100A-100B. Introduction to the U.S. Army (1-1) I, II
Semester I: Structure, organization, and missions of the U.S. Army Preparation and development for officer status. Semester II: Officer leadership, development, and functions. Emphasizing command and responsibilities for a basic foundation of military fundamentals.

201. Civil-Military Relations (3) I
Theories of civil military relations as developed by Huntington, Perlmutter, et al.; analysis of governmental and military sector interrelationship, particularly the locus of power and manner of control.

202. Psychological Theories of Military Leadership (3) II
Psychological theories, models and concepts as applied in the practice of military leadership. Focus on style and role of the small unit military leader in applying principles of motivation, organizational behavior, participative group management in solving military leadership problems. Simulations, case studies and diagnostic tests.

UPPER DIVISION COURSES
(Indented for Undergraduates)
301. Skills of Military Leadership (3) I
Techniques and skills required of military leaders. Military methods of instruction, review of essential map reading skills and case studies of military leadership techniques.

302. Theory and Dynamics of the Military Organization (3) II
Preliminary: Military Science 301. Current tactical doctrine and military techniques of planning and coordination required to apply doctrine to small unit operations.

410. Senior Leadership Seminar (3) I
Leadership and management problems encountered in a company-sized military unit. Role of the junior officer. Designed to prepare senior cadets for positions as leaders and managers of military units.

411. Contemporary Military Policy (3) II
The military justice system as it has evolved from international law principles and established national security policies. History of military law, the philosophy and structure of the system to include court-martial and alternatives to court-martial. (Formerly numbered Military Science 401.)
Music Major

With the A.B. Degree in Applied Arts and Sciences

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."

A minor is not required with this major.

Preparation for the major. Music 110A-110B, 110C-110D (may be waived in full or in part by examination), 115A; four units selected from courses numbered 320A through 335, 158A-158B; four units selected from courses numbered 170 through 189; four units of Music 250, 258A-258B. (26-34 units.)

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 28-29 upper division units to include Music 356A-358B, five units selected from courses numbered Music 369 through 389; one unit selected from Music 448A or 449A; four units of Music 450; 552A-552B; elect one course from Music 310, 351B, 351C, 351D.

Music Major

With the B.M. Degree in Applied Arts and Sciences

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."

A minor is not required with this major.

Preparation for the major. Music 110A-110B, 110C-110D (may be waived in full or in part by examination), 158A-158B, 258A-258B; six units selected from courses numbered Music 170 through 189; four to eight units in Music 250. (26-34 units.)

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. Thirty-eight to forty-two upper division units to include two units selected from Music 448A-448B or 449A-449B; 356A-358B; 552A-552B; six units selected from courses numbered 370 through 389; four to eight units in Music 450, and the requirements in one of the following fields of emphasis:

(a) Performance. Ten units to include Music 367, 497; seven units to select with the aid of the departmental adviser. (Pianists, vocalists, and string performers must include Music 541 and 542.)

Students emphasizing performance must appear in a joint recital during the junior year and must present a solo recital during the senior year. The student must pass an audition of the program to be performed before the music faculty no less than one month in advance of the recital.

(b) Music History and Literature. Ten units to include four units of Music 499 and six units of courses to be selected with the aid of the departmental adviser from related fields such as history, etc.

During the senior year, the student emphasizing music history and literature is required to organize, prepare program notes, and present two recitals consisting of recorded or "live" performances. Each will deal with representative works of a certain period, composers, or styles to be compared. Such students must pass an audition of the lecture and the music to be performed no less than one month in advance of the recitals.

(c) Composition. Ten units to include two units of Music 207, two units of Music 307, and four units with the aid of the departmental adviser.

An interview with the department chair is required for admission to this emphasis.

The student emphasizing composition is required to present a concert of his compositions during the senior year and present the scores of works to be performed to the music faculty no less than one month in advance of the performance.

Foreign Language Requirement. Eight to twelve units (or equivalent knowledge demonstrated in a test of reading knowledge administered by the foreign language department concerned in consultation with the Department of Music) as follows:

1. Vocalists—one semester each of French, German, and Italian.
2. Music History and Literature students—three semesters of one foreign language chosen from French, German, or Italian.
3. All others—two semesters of one foreign language chosen from French, German, or Italian (except that classical guitar students may substitute Spanish).

Music Major*

For the Single Subject Teaching Credential

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the College of Education.

Students in teacher education may use this major for the A.B. degree in applied arts and sciences by completing additional departmental requirements in recital attendance and performance.

Admission to teacher education is required prior to graduation with this major.

Preparation for the major. Music 110A-110B, 110C-110D (may be waived in full or in part by examination), 115A; four units selected from courses numbered 320A through 335, 158A-158B; four units selected from courses numbered 170 through 189; four units of Music 250, 258A-258B. (31-35 units.)

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 30 upper division units to include Music 358A-358B; two units selected from courses numbered Music 369 through 389; 446A-446B-446C; one unit selected from Music 448A or 449A; 355; two units of Music 450; 552A-552B.

*The major for the Single Subject Teaching Credential has been submitted to the Commission on Teacher Credentialing. Consult department to verify current program requirements.

Electives in Music

The Music Department offers certain courses for students who are interested in music as an elective study area for the enrichment of their cultural background. Courses particularly suited for these needs are Music 151 and 351 and the music courses numbered 170 to 190 and from 370 to 390. Some students will be musically prepared to elect courses which may or may not be included in this group. Enrollment by qualified students who wish to elect these courses is encouraged.

Performance Studies for Credit

Credit may be allowed for performance studies under the following conditions:

1. Properly enrolled music majors may enroll for performance studies with resident faculty without an additional fee.
2. Properly enrolled music majors who elect to study off campus with a teacher approved by the Department of Music may do so and may apply credit by examination. Application for such credit must be made each semester in the Office of the Registrar within the official time limits for filing a change of program. The examination will consist of the regular jury examination required of all music majors at the conclusion of each semester.
3. Students may under no circumstances change teachers in the middle of a semester without first securing the permission of the chair of the Department of Music.
4. Prior to the start of performance studies at San Diego State University, students are required to take a preliminary audition conducted by Department of Music faculty which will indicate status at the beginning of their studies.
5. Students who have dropped out of school or have stopped taking performance studies for credit for one semester or more, upon resumption of that instruction for credit are required to present another preliminary audition.
6. At the end of each semester, the Department of Music will sponsor a jury examination to satisfy itself that its standards have been met.
7. Students enrolled in performance studies must be concurrently enrolled in the Comprehensive Musicianship program until such time as the CM requirements are fulfilled.

Music Minor

To be admitted to the minor program, the student must demonstrate vocal or instrumental performing ability.

The minor in music consists of 24 units in music to include Music 110A-110B, 158A-158B, 258A-258B, and six units of upper division electives selected in consultation with the departmental adviser.
Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

LOWER DIVISION COURSES

101. Recitals (1) I, II CR/NCR
Preparation for individual solo performances and attendance at a minimum of 12 concerts or recitals in accordance with departmental requirements. Maximum credit four units.

102. Basic Musicianship for Non-Music Majors (3) I, II
Two lectures and two hours of activity.
Auditory training in the elements of music: melody, rhythm, and harmony. Development of the understanding of these elements through instrumental and vocal experiences which include the use of unison and part-singing, the keyboard, and simple melodic and harmonic instruments.

103A. Basic Aural Skills (1) I, II
Three hours of laboratory. Prerequisite: Ability to read music. Emphasis on ear-training and sight-singing. May be taken as preparation to enter Music 158A.

103B. Aural Skills (1) I, II
Three hours of laboratory. Prerequisite: Music 103A. Continued emphasis on ear-training and sight-singing. May be taken as review for the Junior Level Aural Skills Examination.

110A-110B. Piano—Elementary Class Instruction (1-1) I, II
Two hours. Prerequisite: Music 110A is prerequisite to 110B. Basic keyboard experience through study of music reading, notation, scales, chords, and sight-reading covering a repertoire of beginning and intermediate songs and piano literature, with emphasis on keyboard harmony. Required of music majors and minors and credential candidates for teaching at the kindergarten-primary level.

110C-110D. Piano—Elementary Class Instruction (1-1) I, II
Two hours. Prerequisite: Music 110B is prerequisite to 110C; and 110C to 110D. Continuation of Music 110A-110B.

115A. Voice—Elementary Class Instruction (1) I, II
Two hours. Mastery of the fundamentals of voice. Not open to voice majors.

115B. Voice—Elementary Class Instruction (1) I, II
Two hours. Prerequisite: Music 115A. Observation of individual or group lessons; critiques and discussion; performance in class.

140. Guitar—Elementary Class Instruction (1) I, II
Two hours. Open to all persons interested in fundamentals of guitar and elementary music skills.

151. Introduction to Music (3) I, II
Practical approach to hearing music with understanding and pleasure; through study of representative compositions of various styles and performance media, great musicians and their art. Music correlated with other arts through lectures, recordings, concerts. Closed to music majors and minors.

153. Opera Theatre (2) I, II
Six or more hours per week. The interpretation and characterization of light and grand opera. Specific work in coordination of operatic ensemble. Maximum credit eight units.

158A-158B. Comprehensive Musicianship (3-3) I, II
Two lectures and two hours of activity. Prerequisite: Music 158A is prerequisite to 158B. Direct analysis of musical styles and forms as they have evolved historically; composition, improvisation, performance, and instrumentation; sight-singing, dictation, harmony. Parallel developments in related arts; comparisons with non-Western musical systems.

166. Elements of Jazz I (2) I, II
Prerequisite: Music 158B. Jazz harmony. Building a basic repertoire. Harmonic analysis of jazz standards.

169. Recorder: Elementary Instruction (1) I, II
Two hours. Learning music fundamentals and music reading through recorder playing of soprano and alto instruments. Progresses from simple one note exercises through familiar folk songs into sight reading new material. Rhythm and intonation given special emphasis.

Performance Organization Courses
(Music 170 through 189)
The performance organization courses are devoted to the study in detail and the public performance of a wide range of representative literature for each type of ensemble and are designed to provide students with practical experience in rehearsal techniques.

170. Chamber Music (1) I, II
Three hours. Four hours for opera. Prerequisite: Consent of instructor. Sections for string, woodwind, brass, piano, vocal, and mixed ensemble groups. May be repeated with new content. See Class Schedule for specific content. Maximum credit four units.

175. Marching Band (1)
Two lectures and two hours of activity. Prerequisite: Consent of instructor. Maximum credit two units.

176. Symphonic Band (1) I, II
Semester I: Concurrent registration in Music 175 and 176 required. Combined activity, six hours. Prerequisite: Consent of instructor. Maximum credit four units.

177. Wind Ensemble (1) I, II
Five hours. Prerequisite: Consent of instructor. Maximum credit four units.

180. Symphony Orchestra (1) I, II
Five hours. Prerequisite: Consent of instructor. Maximum credit four units.

185. Concert Choir (1) I, II
Five hours. Prerequisite: Consent of instructor. Maximum credit four units.

188. University Chorus (1) I, II
Three hours. Open to all persons interested in performing oratorio, cantata, opera, and the extended choral works. No entrance auditions are required. Maximum credit four units.

189. Jazz Ensemble (1) I, II
Three hours. Prerequisite: Consent of instructor. Maximum credit four units.
207. Composition Laboratory (1) II
   Three hours of laboratory.
   Prerequisite: Consent of instructor.
   Original writing in different homophonic and polyphonic forms for various media. Maximum credit two units.

246. Practicum in Music (2) II
   One lecture and two hours of activity.
   Materials and techniques used in music instruction at the elementary and secondary school level, with field observation. (Formerly numbered Music 246A-246B.)

250. Performance Studies (1-2) I, II
   Prerequisite: Open only to music majors. Audition and approval by departmental faculty.
   Fifteen one-hour private lessons or thirty-one-hour group sessions for one unit; fifteen one-hour private lessons for two units.
   Studies in technical, stylistic, and aesthetic elements of artistic performance. Candidates for the B.M. degree with Performance emphasis enroll for two units of credit per semester. Candidates for the A.B. degree and for the B.M. degree in composition and in music history and literature enroll for one unit of credit per semester. For conditions under which credit is given, see Performance Studies for Credit in the section of the music major. Maximum credit for Music 250 is eight units.

258A-258B. Comprehensive Musicianship (5-5) I, II
   Four lectures and two hours of activity.
   Prerequisite: Music 158B. Music 258A is prerequisite to 258B.
   Continuation of Music 158A and 158B. Late 19th and 20th century harmony. Counterpoint and texture in Medieval and Renaissance styles.

296. Experimental Topics (1-4)
   Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

UPPER DIVISION COURSES
   (Intended for Undergraduates)

301. Recitals (1) I, II Cr/NC
   Preparation for individual solo performances and attendance at a minimum of 12 concerts or recitals in accordance with department requirements. Maximum credit four units.

310. Electronic Music (2)
   One lecture and three hours of laboratory.
   Prerequisite: Consent of instructor.
   Principles and techniques of electronic sound synthesis, musique concrete, and multimedia application in live performance.

320A. Strings—Elementary Class Instruction (1) I, II
   Two hours.
   Fundamentals of violin, viola, cello and string bass by lecture and acquisition of elementary skills.

320B. Strings—Elementary Class Instruction (1) I, II
   Two hours.
   Prerequisite: Music 320A.
   Fundamentals of violin, viola, cello and string bass by lecture and acquisition of elementary skills emphasizing those instruments not previously studied in Music 320A.

325A. Clarinet and Flute—Elementary Class Instruction (1) I, II
   Two hours.
   Fundamentals of the clarinet and flute by lecture and acquisition of elementary skills.

325B. Oboe and Bassoon—Elementary Class Instruction (1) I, II
   Two hours.
   Fundamentals of oboe and bassoon by lecture and acquisition of elementary skills.

330. Brass—Elementary Class Instruction (1) I, II
   Two hours.
   Fundamentals of brass instruments by lecture and acquisition of elementary skills.

335. Percussion—Elementary Class Instruction (1) I, II
   Two hours.
   Fundamentals of percussion through acquisition of elementary skill on the snare drum and by demonstration and lecture regarding all commonly used percussion instruments of definite and indefinite pitch.

340. Guitar—Elementary Class Instruction (1) I, II
   Two hours.
   Open to all persons interested in fundamentals of guitar and elementary music skills. Not open to students with credit in Music 140.

343. Music Literature for Children (3) I, II Offered at Imperial Valley Campus only
   Prerequisite: Music 102 or 158B.
   Analytical study of music suitable for children of all ages. Background information, musical structure and functions of this music in the lives of children are included.

344. Folk Music (3) I, II
   The origin and development of folk music; the social instruments and their use. Participation in singing and playing folk music.

345. Music In Contemporary Life (3) I, II
   Functional music in society to include its psychological, physical and recreational uses; music as communication; the composer, the musician, and the audience.

351. Great Music (3) I, II
   Significant music literature of the various historical periods with emphasis on the stylistic characteristics through directed listening.
   A. Musical Masterpieces of the 18th and 19th Centuries.
   B. Musical Masterpieces of the 20th Century.
   C. Masterpieces of Grand Opera.
   D. Jazz History and Appreciation.
   E. Music of Africa and the Americas.
   F. Music of Asia and the Pacific.

353. Opera Theatre (2) I, II
   Six or more hours per week. Interpretation and characterization of light and grand opera. Specific work in coordination of opera ensemble. Maximum credit eight units.

355. Ethnic Musics (3)
   World music outside the European art tradition with emphasis on the musics of India, Africa, East Asia and Indonesia.

358A-358B. Comprehensive Musicianship (5-5) I, II
   Four lectures and two hours of activity.
   Prerequisite: Music 258A. Music 358A is prerequisite to 358B.
   Continuation of Music 258A-258B. Counterpoint from 18th to 20th century, serial techniques, jazz, electronic music. Individual projects in instrumentation, composition, analysis, non-Western musics.

364A-364B. History of Jazz (2-2) I, II
   Jazz style and forms as they have evolved historically. Classroom playing experience in jazz styles as a part of study. Designed for music majors.

366. Elements of Jazz II (2) I, II
   Prerequisite: Music 166.
   Techniques and materials of jazz. Melodic, rhythmic, and harmonic analysis of jazz solos and compositions.
### Performance Organization Courses

(Music 369 through 389)

The performance group courses are devoted to the study of the music in detail and the public performance of a wide range of representative literature for each type of ensemble, and designed to provide students with practical experience in rehearsal techniques.

#### 369. Collegium Musicum (1) I, II
- Prerequisite: Music 169
- Performance of medieval and renaissance music on reproductions of historical instruments. May be repeated with new content. See Class Schedule for specific content. Maximum credit four units. (Formerly numbered Music 190 and 390.)

#### 370. Chamber Music (1) I, II
- Three hours. Four hours for opera.
- Prerequisite: Consent of instructor.
- Section for string, woodwind, brass, piano, vocal, and mixed ensemble groups. May be repeated with new content. See Class Schedule for specific content. Maximum credit four units.

#### 375. Marching Band (1) I
- Concurrent registration in Music 375 and 376 required. Combined activity, six hours.
- Prerequisite: Consent of instructor.
- Maximum credit two units.

#### 376. Symphonic Band (1) I, II
- Semester I: Concurrent registration in 375 and 376 required. Combined activity, six hours.
- Semester II: Five hours per week.
- Prerequisite: Consent of instructor.
- Maximum credit four units.

#### 377. Wind Ensemble (1) I, II
- Five hours.
- Prerequisite: Consent of instructor.
- Maximum credit four units.

#### 380. Symphony Orchestra (1) I, II
- Five hours.
- Prerequisite: Consent of instructor.
- Maximum credit four units.

#### 385. Concert Choir (1) I, II
- Five hours.
- Prerequisite: Consent of instructor.
- Maximum credit four units.

#### 388. University Chorus (1) I, II
- Three hours.
- Prerequisite: Consent of instructor.
- Open to all persons interested in performing oratorio, cantata, opera and the extended choral works. No entrance auditions are required. Maximum credit four units.

#### 389. Jazz Ensemble (1) I, II
- Three hours.
- Prerequisite: Consent of instructor.
- Maximum credit four units.

#### 440. Intermediate Guitar (1) I, II
- Two hours.
- Prerequisites: Music 102 and 140.
- Music reading, theory of chord structure, chord progressions, and playing styles of classical, jazz, folk and popular music.

### Other Courses

#### 446. Practicum in Music (2) I, II
- One lecture and two hours of activity.
- Advanced materials and techniques used in instruction, with field observation.
  
  A. Choral Music
  B. Instrumental Music
  C. General Music

#### 448A-448B. Choral Conducting (1-1) I, II
- Three hours.
- Prerequisite: Music 256B. Music 448A is prerequisite to 448B.
- Elements of baton technique and development of basic skills common to choral conducting. Representative literature and techniques for choral organizations will be studied and performed. Practical experience in typical conducting situations will be emphasized in various grade levels.

#### 449A-449B. Instrumental Conducting (1-1) I, II
- Three hours.
- Prerequisite: Music 256B. Music 449A is prerequisite to 449B.
- Orchestra and band scores of graduated levels of advancement. The class will prepare and conduct instrumental works in public performance.

#### 450. Performance Studies (1-2) I, II
- Fifteen one-half hour private lessons or thirty one-hour group sessions for one unit; fifteen two-hour private lessons for two units.
- Studies in technical, stylistic and aesthetic elements of artistic performance. Candidates for the B.M. degree with Performance emphasis enroll for two units of credit per semester. Candidates for the A.B. degree and for the B.M. degree in composition and in music history and literature enroll for one unit of credit per semester. For conditions under which credit is given, see Performance Studies for Credit in the section on the music major. Maximum credit for Music 450 is eight units.

#### 458. Comprehensive Musicianship Pedagogy (3)
- One lecture and four hours of activity.
- Personalized System of Instruction (PSI) or the Keller Plan as used in a music theory class.

#### 461. Rhythmic Skills (1) I, II
- Two hours of activity.
- Systematic refinement of rhythmic skills based mainly on exercises and techniques developed in teaching classical music of India. Multiple patterns, cross rhythms, and a variety of meters through spoken syllables and hand clapping.

#### 466. Elements of Jazz III (2) I, II
- Prerequisite: Music 366.
- Style analysis of jazz solos. Techniques of improvisation. Analysis of repertoire. Not open to students with credit in Music 566.

#### 468. Stylistic Interpretation (2) I, II
- One lecture and two hours of activity.
- Prerequisite: Music 369.
- Individual and group projects in period musical styles. Application of original treatises and manuscripts to performance on historical and modern instruments. May be repeated with new content. Maximum credit six units.
475. Band Pageantry (2) II
One lecture and two hours of activity.
Prerequisite: At least one semester of college marching band.
Marching band drill styles and techniques. Practical experience in marching band techniques.

496. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

497. Senior Recital (2) I, II
Prerequisite: Senior standing in music.
Selection of literature for recital program not to exceed one hour in length: theoretical analysis and historical study of scores chosen; preparation and public performance, and examination before committee of music department faculty.

499. Special Study (1-3) I, II
Prerequisite: Consent of the department chair.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

507. Composition Laboratory (1) II
Three hours of laboratory.
Prerequisites: Music 207 and consent of instructor.
Continuation of Music 207. Maximum credit two units.

510. Advanced Electronic Music (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Music 310.
Complex waveform generation, remote voltage control generation, and historic aspects of electronic music.

541. Performance Studies Pedagogy (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Consent of instructor.
Teaching beginning and intermediate applied music. Survey and evaluation of teaching materials. Observation of individual or group lessons.
A. Piano
B. Strings
C. Voice

542. Performance Studies Laboratory (2) I, II
One lecture and three hours of laboratory.
Prerequisite: Music 541A is prerequisite to 542A and 541B is prerequisite to 542B.
Practical experience in the teaching of individual or group lessons.
A. Piano
B. Strings
C. Voice

552A-552B. History of Music (3-3) I, II
Prerequisite: Music 358B. Music 552A is prerequisite to 552B.
The chronological development of musical art and forms from the Middle Ages to the present. Analytical score study and assigned recordings. Familiarity with musicological resources through individual assignments.

553. Proseminar in Ethnomusicology (3) I
Prerequisite: Music 258B.
Ethnomusicological theory and methodology, including history of the field and its relation to such disciplines as anthropology and linguistics. Areas of concentration include organology, field work, notation, transcription and analysis.

554. Music Literature (2) I, II
Prerequisite: Music 258B.
A concentrated study of the literature in the several areas listed. Analysis by use of scores and of recordings, when available.
A. Chamber Music Literature - (See Class Schedule for specific content.)
B. Symphonic Literature - (See Class Schedule for specific content.)
C. Keyboard Literature
D. Song Literature

561. Area Studies: Ethnomusicology (3) I, II
Prerequisites: Music 351E and 351F.
Music of a specific culture. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units.

562. World Music in Context (2)
One lecture and two hours of activity.
Prerequisites: Music 351E or 351F and consent of instructor.
Practical experience in the performance of specialized traditional genres of world music, social and environmental context in which they exist. Relationship of music, dance, and theater. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units.

566A-566B. Jazz Arranging and Composition (2-2) I, II
Prerequisite: Music 466.
Analysis of jazz compositions and arrangements, arranging and composing for large and small jazz ensembles.

569. Advanced Collegium Musicum (1) I, II
Prerequisite: Music 369.
Preparation and performance of representative works by a specific medieval or renaissance composer on historical instruments. May be repeated with new content. See Class Schedule for specific content. Maximum credit four units.

570. Advanced Chamber Music - (1) I, II
Three hours.
Prerequisite: Consent of instructor.
Study and public performance of established repertory as well as new compositions. Sections for string, woodwind, brass, piano and mixed ensemble groups. May be repeated with new course content. See Class Schedule for specific content. Maximum credit four units.

580. Analogs in Music, Art, and Literature (3) I
Prerequisite: At least one survey course in music history or appreciation, art history, or comparative literature.
Cross-influences and correspondences in the arts from the standpoint of style, texture, rhythm, and form.

596. Special Topics in Music (1-3)
A specialized study of selected topics from the several areas of music. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units.

GRADUATE COURSES
Refer to the Graduate Bulletin.
Natural Science

In the College of Sciences

Faculty
Emeritus: Merzbacher, Shull
Chair: Ingmanson
Professors: Dessel, Dowler, Ingmanson, Metzger, Phleger
Associate Professors: Fehér, May Springer, Wallace
Assistant Professor: Thompson
Lecturer: Hood
Adjunct Faculty: Hardy

Offered by the Department
Teaching major in the physical sciences for the single subject teaching credential.
Minor in history of science and technology.

Physical Science Major*

For the Single Subject Teaching Credential

All candidates for a teaching credential must complete all requirements outlined in this section of the catalog under the College of Education.

This major may be used by students in teacher education as an undergraduate major for the A.B. degree in applied arts and sciences; it prepares students for certification to teach chemistry and physics in secondary schools.

Preparation for the major. Astronomy 101; Chemistry 200, 201, 231, 237, 251 or 250; Geophysical Sciences 100; Mathematics 107, 150, 151, 152, Physics 195, 195L, 196, 196L, 197, 197L; (54 units.)

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 27 upper division units to include Chemistry 410A, 410B; Mathematics 340A; Natural Science 500 and 315 or 316 or 317; Physics 354A, 354B; and six units of upper division electives.

The major for the Single Subject Teaching Credential has been submitted to the Commission on Teacher Credentialing. Consult department to verify current program requirements.

Minor in History of Science and Technology

The minor in the history of science and technology consists of a minimum of 18 units to include Natural Science 315 and 316 and 12 units selected from History 484, 485, Astronomy 305, Biology 405, Mathematics 303, Microbiology 360; Natural Science 314, 317, Philosophy 537.

Courses in the minor may not be counted toward the major, but may be used to satisfy requirements for preparation for the major and general education requirements, if applicable.

LOWER DIVISION COURSES

100. Physical Science (3) I, II
Introduction to concepts and processes in science intended to show why science is essential to a liberal education by recognizing relationship with other areas of knowledge such as philosophy, literature, fine arts, economics. Emphasis varies with instructor. Natural Science 100 not open to students with credit in Natural Science 102 or 210A.

102. Physical Science with Laboratory (4) I, II
Three hours of lecture and three hours of laboratory. Introduction to the physical sciences. Emphasis varies with instructor. Laboratory activity is fully integrated with lecture material. Experiments and observations are done when relevant to the subject discussed. Not open to students with credit in Natural Science 100 or 210A. (Formerly numbered Natural Science 102A.)

103. Laboratory Exercises in Physical Science (2) I, II
One lecture and three hours of laboratory.
Prerequisite: Credit or concurrent registration in a course in a physical science.
Nature of scientific inquiry as illustrated by laboratory exercises and demonstrations based on experimental methods of physical sciences.

110A-110B. Energy in Nature with Laboratory (4-4)
Three lectures and three hours of laboratory.
An integrated introduction to the natural sciences at the university level. Selected topics from physics, chemistry and biology focused on the themes of energy and the relationships between processes and structures in nature. Weekly laboratory sessions include demonstrations, discussions, problem exercises and experiments.

210A-210B. Structure and Concepts of Physical Science (4-4) I, II
Three lectures and three hours of laboratory.
Emphasis on processes of inquiry which are characteristic of physical science. Approach is suited for people interested in science instruction at the elementary level. Not open to students with credit or concurrent registration in Natural Science 100 or 102.

296, Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

UPPER DIVISION COURSES
(Intended for Undergraduates)

305. Modern Physical Science (3) I, II
Prerequisite: A college-level course in the physical sciences or life sciences.
Development of scientific models and allied technologies and their influence on the development of societal attitudes and public policy. Discussion of contemporary problems such as environmental degradation and energy utilization, climatic change, uses of computers, and arms control.

311. Readings in Physical Science (3) I, II
Prerequisite: Upper division standing and completion of lower division science requirement.
Reading of selected materials with informal class discussion of topics. Emphasis on the historical background, the philosophical implications and the impact of science on thought and culture.

314. Personalities in Science (1) I, II
Case study in the life and work of individual scientists from the history of science. See Class Schedule for specific content.

315. History of Science I (3) I, II
Prerequisites: Completion of the General Education Foundations requirement in natural science and three units in classics history category of Foundations. Recommended: Astronomy 101.
The growth and development of science from antiquity to the 15th century. Emphasis on man's cognitive reactions to his environment through the coalescence of the occult arts, empirical practices and rational thought associated with early scientific theory.

316. History of Science II (3) I, II
Prerequisites: Completion of the General Education Foundations requirement in natural science and three units in classics history category of Foundations. Recommended: Astronomy 101, and a course in chemistry.
The major developments during the 16th through 19th centuries. The scientific revolution, the rise of empiricism, the emerging role of scientific societies. Histories of particular theories in both the life sciences and physical sciences.

317. Development of Scientific Thought (3) I, II
Prerequisites: Six units from astronomy, chemistry, geological sciences, natural science, or physics. Recommended: Mathematics 121.
Basic scientific concepts and their historical development with emphasis on the problem of theory construction. The relationship between disciplined imagination and observational fact, as illustrated by selected case histories. Limitations of scientific inquiry.
333. Technology and Human Values (3) I, II
Prerequisite: Completion of Foundations of Learning requirement in natural science. Recommended: Natural Science 100 or 102.
Technologies such as solar and fusion power, lasers, computer services, transport, synthetic food and their impact on values and lifestyles of developed countries. Characteristics of post-industrial society, future shock and biological revolution. Curve extrapolation and simulation by games and computer.
351. Solar Energy (3) I, II
Prerequisite: Completion of a lower division course in the physical sciences and mathematics competency requirement or Mathematics 102.
Principles and practical aspects of solar energy including radiation transfer, optics, solar spectrum, heat transfer and storage, active solar and passive solar devices and systems, and design of passive solar buildings and shelters.
400. Seminar (1-3) I, II
A directed study of a topic to be chosen by instructor and announced in Class Schedule. Maximum credit six units.
412A-412B-412C. Processes and Inquiry in the Natural Sciences (4-4-4) I, II
Three lectures and two hours of activity.
Prerequisite: Completion of general education requirements in natural science.
Investigation of processes of inquiry and rational thinking skills characteristic of the sciences.
A. Physical Sciences
B. Earth Sciences (mostly chemistry and astronomy)
C. Life Sciences
430. Interpretation of Quantum Mechanics (3) I, II
Prerequisite: Completion of general education requirements in natural science.
Theoretical development of the interpretation of quantum mechanics. May be repeated with new credit.
431. The Origins of Life (3) II
Prerequisite: Completion of general education requirements in natural science. Recommended: A course in chemistry or Natural Science 102.
Theories of chemical evolution with emphasis on multidisciplinary aspects involving geology, geochemistry, cosmochemistry and molecular biology.
496. Topics in Natural Science (1-4) I, II
Prerequisite: Consent of instructor.
Selected topics in classical and modern natural science. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor’s degree. Maximum credit six units.
499. Special Study (1-3) I, II
Prerequisite: Consent of instructor.
Individual study or laboratory work on a special problem in physical science selected by the student. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

500. Seminar in Curriculum and Instruction in Science (3)
Prerequisite: Secondary Education 400.
Factors directing the changing science curriculum in secondary schools; recent trends and current research in the teaching of science in secondary schools and in science curriculum development; current practices in science teaching in secondary schools.
596. Special Topics in Natural Science (1-4) I, II, S
Prerequisite: Minimum ten units of natural science.
Selected topics in natural science for preservice and inservice elementary and secondary teachers and candidates for the M.A. in Education. May be repeated with consent of instructor. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor’s degree. Maximum credit six units.

GRADUATE COURSES
Refer to the Graduate Bulletin.

Naval Science

in the College of Professional Studies and Fine Arts

Faculty
Chair: Crayton
Professor: Crayton
Assistant Professor: Boyd, Brown, Cuddy, Dobson, Prohaska, Schartmann, Stier

NROTC Curriculum

The Department of Naval Science offers two programs, a scholarship and a nonscholarship program leading to a commission in the United States Navy or United States Marine Corps. Scholarship Program students receive tuition, fees, books and a stipend of $100 per month while nonscholarship or College Program students receive a $100 per month stipend during their final two years of college. All students receive instruction in essential naval science subjects which, in conjunction with a baccalaureate degree in the field of their major, qualifies them for commissions as Ensign, United States Navy or Second Lieutenant, United States Marine Corps.

Naval science courses are open to all students having an interest in history, national security, foreign policy, organizational leadership, management and the military services. Enrollment in the Naval Reserve Officer Training Corps (NROTC) is not a requirement for taking naval science courses.

LOWER DIVISION COURSES

101. Introduction to Naval Science (2) I
Structure, principles, and practices; lines of command and control; logistical organizations; functions and services of major components of the Navy and Marine Corps; shipboard organizations.

102. Naval Ships Systems I (3) II
Types, structure, and purpose of naval ships; compartmentation, propulsion systems, auxiliary power systems, interior communications, ship control, ship design and stability.

201. Naval Ships Systems I (3) II
Theory and principles of operation at naval weapons systems including types of weapons and control systems, capabilities and limitations, theory of target acquisition, identification and tracking, trajectory principles, and the basics of naval ordnance.

202. Sea Power and Maritime Affairs (2) II
Prerequisite: Naval Science 201.
Sea power and maritime affairs: general concept of sea power (including Merchant Marine); role of naval warfare components used to support the Navy’s mission; sea power as an instrument of national policy; comparative study of U.S. and Soviet strategies.

UPPER DIVISION COURSES
(Intended for Undergraduates)

301. Navigation and Naval Operations I (3) I
Prerequisite: Advanced standing.
Theory, principles and procedures of ship navigation. Topics include mathematical analysis, spherical triangulation, practical work involving sight reduction, sextants, publications, required logs/reports, piloting, celestial and electronic navigation techniques.

302. Navigation and Naval Operations II (3) II
Prerequisite: Naval Science 301.
Principles and procedures of ship movement and employment including tactical formations and dispositions, relative motion, communications, sonar-radar search and screening theory, rules of the road, lights, signals and navigational aids.
310. Evolution of Military Conflict (3) II
Prerequisite: Advanced standing.
Forms of warfare through history to formulate the sense of historical continuity in the evolution of warfare, to develop a basic sense of strategy and alternative military actions, and to explore impact of historical precedent on military thought and actions.

401. Naval Leadership I (3) I
Prerequisite: Advanced standing.
Principles of leadership and management. Development of skills in the areas of communications, control, direction, management and leadership.

402. Naval Leadership II (2) II
Prerequisite: Naval Science 401.
Human resource management, naval personnel management, material management and the administration of discipline.

410. Amphibious Operations (3) I
Prerequisite: Advanced standing.
Concept of amphibious warfare, doctrinal origins, and its evolution as an element of naval policy during the twentieth century.

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Nursing
In the College of Human Services
Agency Member of the National League for Nursing
Agency Member of the American Association of Colleges of Nursing
Accredited by the California Board of Registered Nursing
and by the National League for Nursing

Faculty
Emeritus: Coven, Lahm, Moses, Nye, Thomas
Director: Wozniak
Professors: Black, Salerno, Wozniak
Associate Professors: Flagg, Gulino, Heineken, Hines, Lovardigh, Standeven, Sweeney, Verderber
Assistant Professors: La Monica, Leslie, Moffett, Shively
Lecturers: Borgie, Broom, Burner, Carson, Colwell, Fraser, Gillett, Goldberger, Good, Holm, Isaacs, Keith-Leach, Lischke, Meador, Mitchell, Palomo, Rapps, Schreiber, Smith, Wallace

Offered by the School of Nursing
Master of Science degree in nursing.
Major in nursing with the B.S. degree in applied arts and sciences.
Health services credential.

Standards for Admission

Admission to the University
In addition to the requirements for admission to the University as listed in the section of this catalog on "Graduation Requirements," the following criteria must be met for admission to the University as a nursing major.

1. High School Course Requirements. The following courses are required:
   a. One year English composition at junior/senior level.
   b. One year advanced algebra.
   c. One year chemistry with a laboratory.
   d. One year biology.

2. Transfer Students. Transfer students will be required to demonstrate the four high school course requirements or introductory college or university course work in the same disciplines.

Admission to the Professional Program in Nursing

1. Declaration of Major. Only students who are declared nursing majors at SDSU will have their application considered.

2. Prerequisite Courses. The following courses and course grades are required for admission to the nursing program:
   a. Course grade requirement (C or better) in each required university course:
      Chemistry 130
      Microbiology 210
      Sociology 101
      Psychology 101
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3. Minimum Grade Point Average. Applicants must complete the six prerequisite courses with a minimum overall grade point average of 2.5. (NOTE: The minimum grade point average of the last three nursing classes admitted to Nursing has been 3.2 or better.)

4. Writing Competency Requirement. All students must demonstrate their writing competency on one of the following tests:
   a. By a score of 47 on the Test of Standard Written English of the Scholastic Aptitude Test
   b. By a score of 20 on the American College Tests
   c. By a score of 153 on the American Placement Test

5. Additional Point System. Applicants requesting admission to the professional course work will be ranked in accordance with points earned. For specific additional point system allocation, consult the School of Nursing office.

6. Health Requirement. To meet the specific health requirements, a medical examination and immunizations must be completed prior to enrolling in the first nursing course. The medical examination is in addition to the medical required for admission to the University. For specific information concerning immunization series, consult the School of Nursing office.

7. Academic Credit Through Examination. Academic credit by examination may be obtained by those whose prior education and/or experience provides the knowledge and skills required to meet the objectives of one or more courses. Students who believe they may be eligible for credit by examination should contact the School of Nursing office for an appointment for special advising prior to submitting their application for admission. For University policy regarding credit-by-examination, consult “Academic Credit Through Examination” in the “General Regulations” section of this catalog.

8. Formal Application. Application to the nursing program must be made during the semester that the student is completing prerequisite non-nursing courses (22 units). Obtain application form at the College of Human Services or School of Nursing.

Special Instructions

1. Change of Major. Requests for change of major during the 1984-85 academic year will be granted only on a space available basis. Students must be admitted to the University as declared nursing majors.

2. Second Baccalaureate Degree. Students requesting a second baccalaureate degree with a major in nursing will be considered by the School of Nursing during the 1984-85 academic year only on a space available basis.

3. Full-Time Study. Students enrolled in the nursing program are required to carry a full-time study load. Students with extenuating circumstances may petition the Student Affairs Committee for special consideration.

4. Liability Insurance and Transportation. Students enrolled in the nursing program are required to provide their own professional liability insurance and transportation to off-campus clinical agencies and for home visits.

5. Impacted Program. The Nursing Major is designated as an impacted program and specific regulations related to admissions are imposed. Consult “Locally and Statewide Impacted Programs” in the “Admissions” section of this catalog for regulations.

6. Honors Program. The honors program is available to students in the senior level who meet the criteria. Four units of honors courses constitute the Honors Program and will be validated as such on the official transcript. Less than four units completed will not be validated as “honors,” but may be credited as a special studies program.

7. Health Insurance. All students are advised to obtain health insurance coverage. Students are responsible for health care cost when services are rendered by a health care agency.

Nursing Major

With the B.S. Degree in Applied Arts and Sciences

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on “Graduation Requirements.” A minor is not required with this major.

Nursing majors are eligible to take the State Board Registered Nurse license examination after completing six semesters of the prescribed curriculum. Graduates are eligible to apply for the California Certificate of Public Health Nursing.

Nursing majors are advised to consult with the School of Nursing office on a semester basis for program modification or policy revisions.

Preparation for the major. Upon acceptance into the program, Nursing 202, 204, 250, 252, Chemistry 160, three units in statistics, and three units in growth and development must be successfully completed before continuation in the upper division courses required for the major.

NOTE: A grade of C (2.0) or better is required in all nursing or corequisite courses. No nursing course may be repeated more than once.

Progress in the nursing program is dependent upon completion of corequisite and nursing courses in the prescribed sequence as outlined below. While corequisite courses may be completed prior to the specified semester, students will not be permitted to progress to the next semester until both corequisite and nursing courses are completed at each semester.

Upper Division Writing Requirement. Passing the University Writing Examination or English 304W with a grade of C (2.0) or better.

Major. A minimum of 45 upper division units in nursing to include Nursing 306, 308, 310, 350, 354, 356, 412, 414, and 452 or 454.

Sequence of Courses in the Nursing Curriculum

<table>
<thead>
<tr>
<th>First Year</th>
<th>Units</th>
<th>Second Year</th>
<th>Units</th>
<th>Third Year</th>
<th>Units</th>
<th>Fourth Year</th>
<th>Units</th>
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<tr>
<td>First Semester</td>
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<td>Second Semester</td>
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<td>Chemistry 130</td>
<td>Chemistry 160</td>
<td>Microbiology 210</td>
<td>Nursing 202</td>
<td>Growth and Development</td>
<td>Nursing 306</td>
<td>Nursing 412</td>
<td>Nursing 452 or 454</td>
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<tr>
<td>Zoology 108</td>
<td>Sociology 101</td>
<td>Biology 261</td>
<td>Nursing 204</td>
<td>Nursing 250</td>
<td>Chemistry 356</td>
<td>General Education</td>
<td>Nursing 414</td>
</tr>
<tr>
<td>G.E. (Written Communication)</td>
<td>G.E. (Communication)</td>
<td>Psychology 101</td>
<td>General Education</td>
<td>Psychology 351</td>
<td>English 352</td>
<td>General Education</td>
<td>General Education</td>
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<td>18</td>
<td>16</td>
<td>14</td>
<td>+ May be satisfied by examination.</td>
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</tbody>
</table>
GENERAL EDUCATION REQUIREMENTS

Students will complete a minimum of 50 units in General Education to include a minimum of nine upper division units. No more than 12 units may be used for General Education credit from any one department or academic unit.

I. Communication and Analytical Reasoning: 12 units
   A. Written Communication (6 units)
   B. Oral Communication (3 units)
   C. Statistics (3 units)

II. Foundations of Learning: 26 units
    A. Natural Science (11 units)
       1. Life Sciences (6 units) to be satisfied by:
          Zoology 108 (4 units)
          Microbiology 210 (4 units)
       2. Physical Sciences (3 units) to be satisfied by:
          Chemistry 130 (3 units) or Chemistry 160 (3 units)
    B. Social and Behavioral Sciences (6 units) to be satisfied by:
       Psychology 101 (3 units)
       Sociology 101 (3 units)
    C. Humanities (9 units)
       At least three units must be from three of the four areas 1, 2, 3, 4. From the Humanities section of the regular General Education program. Refer to General Education requirements in the Graduation Requirements section of the catalog.

III. Explorations: Twelve units to include Psychology 351 and at least three units from Humanities. At least nine of the twelve units must be upper division and three must be cross-cultural. Refer to General Education requirements in the Graduation Requirements section of the catalog.

Health Services Credential

San Diego State University offers curricula leading to the Health Services Credential. This authorizes the holder to serve as a School Nurse. For information concerning the credential, the student is referred to the School of Nursing Office, SS-101.

The Health Services Credential has been approved by the Commission on Teacher Credentialing.

All applicants seeking admission to the Health Services Credential must be admitted to the University and accepted as a classified postbaccalaureate student.

Standards for Admission

1. Baccalaureate degree in nursing or related field (including community health nursing).
2. Current California Registered Nurse License.
3. Required admission and advisement required with School of Nursing Graduate Adviser.

Program

The following program elements are required of all health services credential candidates:

<table>
<thead>
<tr>
<th>Units</th>
<th>Program</th>
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<tbody>
<tr>
<td>31 units</td>
<td>NURS 500 Client Assessment</td>
</tr>
<tr>
<td>4</td>
<td>NURS 502 School Nursing Management Practices</td>
</tr>
<tr>
<td>3</td>
<td>NURS 504 Primary Health Care of the School-Aged Child</td>
</tr>
<tr>
<td>3</td>
<td>NURS 504L Primary Health Care of School-Aged Child Practicum (180 hours)</td>
</tr>
<tr>
<td>3</td>
<td>HS 574 Habit-forming Substances</td>
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<tr>
<td>3</td>
<td>*HS 575 Sex Education</td>
</tr>
<tr>
<td>3</td>
<td>*PH 601 Epidemiology</td>
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<tr>
<td>3</td>
<td>CDIS 540 Hearing Conservation and Audiology for School Nurses</td>
</tr>
<tr>
<td>3</td>
<td>SPED 500 Exceptional Individuals</td>
</tr>
<tr>
<td>3</td>
<td>Electives: Three units selected from Nursing 630, 637, 638, 639; Health Science 520, 552; Public Health 621, 661, 753; Social Work 550; Special Education 505</td>
</tr>
</tbody>
</table>

* Prerequisites waived for students in this program.

LOWER DIVISION COURSES

202. Nursing Science I (5) I, II
   Three lectures and six hours of laboratory.
   Prerequisites: Admission to the nursing program. Satisfactory completion or concurrent registration in Chemistry 160 and concurrent registration in Nursing 204.
   Analysis of the nursing process and the role of the professional nurse in utilization of this process. Emphasis on determining and measuring variables relevant to assessment.

204. Nurse-Client Relationships (3) I, II
   Study of nurse-client communication and its application to the clinical practice of nursing. Emphasis on development of each student's ability to communicate in collaborative health team efforts and in patient care situations.

250. Nursing Science II (4) I, II
   Two lectures and six hours of laboratory.
   Prerequisites: Nursing 202, 204; course in growth and development; and concurrent registration in Nursing 252.
   Differentiation of assessment variables and their impact on diagnosis, planning and implementation of care. Laboratory includes experiences with clients having a variety of nursing diagnoses requiring determination of differential priorities in planning and implementing care.

252. Stress in the Health Continuum (5) I, II
   Three lectures and six hours of laboratory.
   Prerequisite: Concurrent registration in Nursing 250.
   Focus on psychological, social and biological stressors affecting man's health status and the modalities of nursing intervention which promote health. Emphasis on developmental and situational stressors commonly experienced in modern society and man's adaptive and maladaptive behavioral and biological responses from birth to senescence.

UPPER DIVISION COURSES

(Required for Undergraduates)

300. Honors Course (2-2) I, II
   Prerequisites: Nursing 252, 254 and 356; concurrent registration in Nursing 412 and 414. Cumulative overall G.P.A. of 3.5.
   Current issues and trends in the nursing profession will be studied in depth, with emphasis on ethics, values, philosophy and history.

306. Nursing Science III (3) I, II
   Prerequisites: Nursing 250, 252; concurrent registration in Nursing 306, 310 and Psychology 351.
   Analysis of the implementation of quality client care and consumer needs and rights. Concepts of qualitative and quantitative client care and exploration of the expected contribution of various health personnel.

308. Adult Health Nursing (6) I, II
   Three lectures and nine hours of laboratory.
   Prerequisites: Nursing 250, 252; concurrent registration in Nursing 306, 310 and Psychology 351.
   Application of theories of stressors and/or biological responses specifically affecting the adult on the health-illness continuum. Laboratory focuses on the application of the nursing process in implementing preventive, supportive, and restorative therapeutic modalities which assist the adult client to reestablish, maintain, or develop new adaptive responses.

310. Psychosocial Nursing (6) I, II
   Three lectures and nine hours of laboratory.
   Prerequisites: Concurrent registration in Nursing 306, 308 and Psychology 351.
   Theory and clinical laboratory in the application of the nursing process to the care of clients evidencing maladaptive responses to psychosocial stressors. Presentation of theories describing and explaining maladaptive behaviors and application of nursing interventions in a variety of treatment modalities.

15—78398
320. Health and the Nature of Stress (3) I, II
Interdisciplinary focus on health: psychosocial and physiological stressors affecting health status. Concepts of stress theory with attention to developmental and situational stressors commonly experienced in modern society. People's adaptive and maladaptive responses from birth through senescence and death.

335. The Professional Role (3) Irregular
Development of the nursing profession in Western Civilization. Focus on the multifaceted role of the professional nurse in modern social order.

343. Health Care of the Aged (3)
Prerequisite: Open to Nursing and non-nursing majors. Assessment of the mental and physical health care needs of the aged client and principles of gerontology.

343L. Health Care of the Aged Laboratory (2)
Six hours of laboratory.
Prerequisite: Consent of instructor. Open to students with clinical background in nursing or a related health discipline. Credit or concurrent registration in Nursing 343.

350. Nursing Science IV (3) I, II
Prerequisites: Nursing 306, 308 and 310; concurrent registration in Nursing 354 and 356. Analysis of evaluation phase of nursing process as a form of documentation of qualitative care. Emphasis on development of critical elements, criteria, and conclusions in effecting objective evaluation of client care.

354. Maternal-Neonatal Nursing (6) I, II
Three lectures and nine hours of laboratory.
Prerequisites: Concurrent registration in Nursing 350 and 356. Family-centered focus encompassing adaptive and maladaptive responses to stressors in the maternity cycle and their effect on the neonate. Clinical laboratory focuses on the application of nursing theory and process in providing preventive, supportive and restorative care to mothers and neonates.

356. Child Health Nursing (6) I, II
Three lectures and nine hours of laboratory.
Prerequisites: Concurrent registration in Nursing 350 and 354. Stressors affecting the child on health-illness continuum. Nursing theory and laboratory focuses on application of nursing process in providing preventive, supportive and restorative therapeutic modalities in a variety of settings. Emphasis on the child in the family and the necessary intervention to promote adaptation of the child to attain, maintain or regain an optimum level of health.

412. Health Care Systems and Methods (5) I, II
Three lectures and six hours of laboratory.
Prerequisites: Nursing 350, 354 and 356; concurrent registration in Nursing 414. Theories and methods of client and personnel management. Focus on the reciprocal effects of the professional nurse's preparation and role and emergent patterns of health care.

414. Community Health Nursing (5) I, II
Three lectures and six hours of laboratory.
Prerequisite: Concurrent registration in Nursing 412. Assessment and utilization of community health care concepts and delivery with emphasis on promotion of health, prevention of illness and individual and group teaching techniques. Consideration given to cultural aspects of health care.

452. Clinical Nursing in Complex Situations (5) I, II
Three lectures and six hours of laboratory.
Prerequisites: Nursing 412, 414; concurrent registration in Nursing 453. Theory and selected laboratory experience in the care of clients in complex situations requiring intensive nursing care. Consideration will be given to student's clinical area of concentration.

453. Basic EKG Monitoring (1) I, II
Prerequisite recommended: Concurrent registration in Nursing 452. Introduction to EKG monitoring. Electrophysiological concepts relevant to interpreting supraventricular and ventricular rhythms and appropriate nursing interventions.

454. Ambulatory Nursing In Complex Situations (5) I, II
Three lectures and six hours of laboratory.
Prerequisites: Nursing 412, 414. Theory and selected laboratory experience in the care of ambulatory clients requiring specific or complex nursing care. Consideration will be given to the student's clinical area of concentration.

496. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

499. Special Study (1-3) I, II
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

 UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

500. Client Assessment (4)
Three lectures and three hours of laboratory.
Prerequisite: Permission of graduate adviser. Physical diagnosis and psychosocial assessment of clients with health problems. Nursing process emphasis to include biopsychosocial health history and nursing diagnosis.

502. School Nursing Management Practices (3) II
Prerequisite: Nursing 412. Professional and organizational systems and structures which influence health care practices of the school nurse. Health services administration; legal responsibility; role and function of the school nurse in the school, home, and community. Current practices in school health setting. (Formerly numbered Nursing 480.)

504. Primary Health Care of the School-Aged Child (3) I
Prerequisite: Nursing 500. Primary health care of the school-aged child and adolescent. Major health problems, chronic illnesses, communicable diseases, traumatic injuries, learning and behavior disorders. (Formerly numbered Nursing 481A.)

504L. Primary Health Care of School-Aged Child Practicum (3) II
Twelve hours of practicum.
Prerequisite: Nursing 504. Application of theory to a select population of school-aged children and adolescents. Provides direct experience in clinical nursing management of common health problems and developmental disabilities. (Formerly numbered Nursing 481B.)

596. Special Topics In Nursing (1-3)
Prerequisites: Completion of 30 upper division units in nursing or graduate status; 3.0 grade point average. Selected topics in the practice of nursing. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units. Maximum credit three units applicable to a master's degree.

GRADUATE COURSES
Refer to the Graduate Bulletin.
Oceanography

Administered by the Dean of the College of Sciences

San Diego State University provides preparation for work in the oceans by offering degree programs in fundamental fields, supplemented by marine-related course work and oceanographic experience. A minor in oceanography is offered for undergraduate science students through the Department of Geological Sciences. Ocean-oriented courses and bachelor's degree programs are available in the departments of Biology, Botany, Chemistry, Civil and Mechanical Engineering, Geography, Geological Sciences, Microbiology, Natural Science, Physics and Zoology. Master’s degrees with emphasis on marine problems may be earned in these departments. The Ph.D. degree is offered in Chemistry, Ecology and Genetics jointly with the University of California. Students who require advising in Oceanography should inquire at the Center for Marine Studies.

Marine Studies

Marine studies at San Diego State University are offered by departments in the sciences, engineering, economics, geography, and other fields. The Center for Marine Studies coordinates work in the area of marine studies and provides special supporting services to the faculty, staff, and students involved. Services provided by the Center include advising students concerning marine studies and employment opportunities, assistance in research and publication, operation of the University’s marine laboratory at Mission Bay, a boat operations program, and support of the University’s Diving Safety Program.

Degrees in oceanography or marine studies are not offered by the University. Instead, students emphasize marine studies within the traditional departmental degree programs through advanced, marine-related course work and research. Courses in general oceanography are offered with the cooperation of faculty from the departments of Geological Sciences, Natural Science, Biology, Chemistry, and Zoology. Advanced course work and research in geological and physical oceanography are conducted in the Geological Sciences Department. An option in marine geology is offered as part of the undergraduate major in geology. The Chemistry Department offers work in chemical oceanography. Advanced courses and research in biological oceanography, marine biology, marine botany, and marine zoology are conducted in the departments of Biology, Botany, Microbiology, and Zoology. Similar marine-related course work and research are offered in the departments of Economics and Geography and in the College of Engineering. Students who require advising in these areas should inquire at the Center for Marine Studies.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

541. Oceanography (3) I, II
Prerequisites: Chemistry 200, Mathematics 121 and 122 or 150, Physics 180A or 195, 195L.
Multidisciplinary examination of the physical, chemical, biological and geological aspects of the marine environment and the relationship of man with the sea. Intended for science majors only.

For additional courses in Oceanography see:
- Biology 531, Biological Oceanography
- Chemistry 501, Chemical Oceanography
- Geological Sciences 540, Marine Geology
- Geological Sciences 545, Descriptive Physical Oceanography
- Geological Sciences 548, Coastal and Estuarine Physical Oceanography
- Microbiology 560, Marine Microbiology
- Zoology 510, Marine Invertebrate Zoology

Oriental Languages

Refer to sections on Chinese, Hebrew, Japanese.
Philosophy
In the College of Arts and Letters

Faculty
Emeritus: Lauer, Nelson, O'Reilly, Ruja, Shields
Chair: Carella
Professors: Carella, Feenberg, Howard, McClurg, Rosenstein, Snyder, Warren, Weissman
Associate Professors: Gregor, Troxell, Weston
Lecturers: Cain, Freeman, Liston, Mijuskovic, Mueller, Pearsall, Schlesinger, Wawrytko

Offered by the Department
Master of Arts degree in philosophy
Major in philosophy with the A.B. degree in liberal arts and sciences.
Minor in philosophy

Advising
All College of Arts and Letters majors are urged to consult with their department adviser as soon as possible; they are required to meet with their department adviser within the first two semesters after declaration or change of major.

Philosophy Major
With the A.B. Degree in Liberal Arts and Sciences
All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."
A minor is not required with this major.

Preparation for the major
Six lower division units in philosophy including Philosophy 120.

Foreign Language Requirement
Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Refer to section of catalog on "Graduation Requirements."

Upper Division Writing Requirement
Passing the University Writing Examination or English 306W, or English 506W, or History 396W with a grade of C (2.0) or better.

Major
A minimum of 27 upper division units in philosophy (18 of which must be in 500-numbered courses) to include 301 and 303. The remaining units for the major distributed as follows:
- a. Three units from among 502, 504, 505.
- b. Three units, either 506 or 507.
- c. Three units from among 523, 525, 537.
- d. Three units from among 512, 527, 528.
- e. Four units from among 521, 522, 531.
- f. Six units elective, three of which must be in 500-numbered courses.

Philosophy Minor
The minor in philosophy consists of a minimum of 15 units in philosophy, 12 units of which must be in upper division courses. At least six units must be in one of the following groups:
- History: Philosophy 301, 303, 336, 502, 504, 506, 507, 508, 509, 532 and 564.
- Knowledge and Reality: Philosophy 521, 522, 523, 525, 531, 537, 575 and 596.

Philosophy 301 is recommended.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

LOWER DIVISION COURSES

101. Introduction to Philosophy: Values (3) I, II
Introduction to philosophical inquiry, with emphasis on problems of value. Each student is encouraged to think independently and formulate his own tentative conclusions.

UPPER DIVISION COURSES

(1-3) I, II

102. Introduction to Philosophy: Knowledge and Reality
Introduction to philosophical inquiry with emphasis on problems of knowledge and reality. Each student is encouraged to think independently and formulate his own tentative conclusions.

103. Historical Introduction to Philosophy (3) I, II
Introduction to philosophical inquiry through study of the works of major philosophers in their historical contexts.

120. Logic (3) I, II
Introduction to deductive and inductive logic, Logic and language. Analysis of fallacies. Uses of logic in science and in daily life.

296. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

300. Honors Course (1-3)
Refer to Honors Program.

301. History of Philosophy I (3) I, II
Prerequisite: Three units of philosophy.
Thales through Marcus Aurelius.

302. History of Philosophy II (3)
Prerequisite: Six units of philosophy.
Kant through Diderot.

310. Philosophy and Human Nature (3)
Concept of human nature. Descriptive and normative aspects of major theories of human nature.

329. Social Ethics (3)
Ethical issues of contemporary life. Individualism vs. collectivism, democracy vs. dictatorship; ethical problems arising in law, medicine, business, government and interpersonal relationships.

330. Medical Ethics (3)
Value judgments upon which medicine is based and the ethical issues which medicine faces.

334. Philosophy of Literature (3)
Study of literature of philosophical significance, and of philosophical problems of literature.

336. Jewish Philosophy (3)
Prerequisite: Three units of philosophy.
Study of Jewish thought emphasizing both differences and similarities with Western philosophical traditions. Emphasis on philosophical traditions which have shaped the intellectual and cultural life of Israel.

350. Philosophical Aspects of Buddhist Thought (3)
Prerequisite: Three units of philosophy.
Study of the philosophical aspects of Buddhist thought emphasizing both differences and similarities with Western philosophical traditions. Emphasis on Indian sources.

351. Chinese Philosophy (3)
Prerequisite: Three units of philosophy. Philosophical traditions which have shaped the intellectual and cultural life of China. Emphasis on foundational texts surviving from pre-Han China.

496. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

499. Special Study (1-3) I, II
Prerequisite: Twelve upper division units in philosophy and consent of instructor.
Individual study. Maximum credit six units.
502. History of Philosophy II (3)  
Prerequisite: Philosophy 301  
Principles and movements in European philosophy from Hegel to Nietzsche.

504. Continental Philosophy After Kant (3)  
Prerequisite: Six units of philosophy.  
Major figures and movements in European philosophy from Hegel to Nietzsche.

505. British Philosophy After Hume (3)  
Prerequisite: Six units of philosophy.  
British philosophy from the late eighteenth century to World War I.

506. Twentieth Century Continental Philosophy (3)  
Prerequisite: Six units of philosophy.  
Major figures and movements in European philosophy from Husserl to the present.

507. Twentieth Century Anglo-American Philosophy (3)  
Prerequisite: Six units of philosophy.  
Major figures and movements in Anglo-American philosophy since World War I.

508. Existentialism (3)  
Prerequisite: Six units of philosophy.  
The philosophical aspects of Existentialism. Major emphasis is on the diversity of thought within a common approach as this is shown in individual thinkers.

509. Ordinary Language Analysis (3)  
Prerequisite: Six units of philosophy.  
Foundations of linguistic philosophy with emphasis on achieving an awareness of the relationship between thinking and language.

510. Philosophy of Law (3)  
Prerequisite: Three units of philosophy and three units of political science.  
The nature of law and the logic of legal reasoning. An exploration of certain key legal concepts such as causation, responsibility, personality, and property.

512. Political Philosophy (3)  
Prerequisite: Philosophy 101, 102 or 103.  
Selected aspects of the political structures within which we live, such as law, power, sovereignty, justice, liberty, welfare.

521. Deductive Logic (3)  
Prerequisite: Philosophy 120.  
Principles of inference for symbolic deductive systems: connectives, quantifiers, relations and sets. Interpretations of deductive systems in mathematics, science, and ordinary language. Not open to students with credit in Mathematics 523.

522. Inductive Logic (3)  
Prerequisite: Philosophy 120.  
Definition, classification, and division. The logic of experimentation and statistics. Formation and validation of hypotheses. Probability theory.

523. Theory of Knowledge (3)  
Prerequisite: Six units of philosophy.  
The nature of human knowledge: mysticism, rationalism, empiricism, pragmatism.

525. Metaphysics (3)  
Prerequisite: Six units of philosophy.  
Prominent theories of reality, e.g., realism and nominalism, materialism and idealism, teleology and determinism.

527. Values and Social Science (3)  
Prerequisite: Six units of philosophy.  
Analysis and discussion of the nature of values and value-judgment with particular reference to the social sciences. Among relevant issues: the naturalistic fallacy, facts and values, authoritarianism, emotivism, objective relativism, the individual and the community.

528. Theory of Ethics (3)  
Prerequisite: Six units of philosophy.  
Significant and typical value theories and systems and the concrete problems such theories seek to explain. Emphasis will be on moral values.

531. Philosophy of Language (3)  
Prerequisite: Six units of philosophy.  
An introduction to theories of meaning for natural languages and formal systems: concepts of truth, synonymy, and analyticity, related epistemological and ontological problems.

532. Philosophy of History (3)  
Prerequisite: Six units of philosophy.  
The nature of history and historical inquiry. As metaphysics: A study of theories of historical development. As methodology: History as science, truth and fact in history, historical objectivity, the purpose of history.

533. Philosophy of Education (3)  
Prerequisite: Philosophy 101, 102 or 103.  
Various philosophical viewpoints concerning education. The functions of education as conceived by major figures in the Western philosophical tradition.

535. Philosophy of Religion (3)  
Prerequisite: Six units of philosophy.  
Philosophical examination of issues raised by the religious impulse in man.

536. Philosophy of Mind (3)  
Prerequisite: Three upper division units in philosophy.  
Analysis of the concept of mind, intention, behavior, etc. Developments generated by works of such philosophers as Wittgenstein, W. James, and Ryle.

537. Philosophy of Science (3)  
Prerequisite: Six units of philosophy.  
The basic concepts and methods underlying contemporary scientific thought. Contributions of the special sciences to a view of the universe as a whole.

541. History of Aesthetics (3)  
Prerequisite: Philosophy 101, 102 or 103.  
Major documents in the history of aesthetics.

542. Philosophy of Art (3)  
Prerequisite: Six units of philosophy.  
The nature of aesthetic experience. Principal contemporary theories of art in relation to actual artistic production and to the function of art in society.

564. American Philosophy (3)  
Prerequisite: Six units of philosophy.  
American philosophy from 1850 to the 1920s: idealism, pragmatism, new and critical realism.

575, A Major Philosopher (3)  
Prerequisite: Six units of philosophy.  
The writings of one major philosopher. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to the major. Maximum credit six units applicable on a master's degree.

596, Selected Topics (3)  
Prerequisite: Six units of philosophy.  
A critical analysis of a major problem or movement in philosophy. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable toward the major in philosophy. Maximum credit six units for both 596 and 795 applicable to a master's degree. Limit of nine units of any combination of 496, 596, 596 courses applicable to a bachelor's degree.

GRADUATE COURSES
Refer to the Graduate Bulletin.
Physical Education

In the College of Professional Studies and Fine Arts

Faculty
Emeritus: Andrus, Benton, Broadbent, Cave, Friedman, Kasch, Landis, Lockman, Murphy, Olsen, A., Schute, Schwob, Scott, Sportsman, Terry, Tolfesifer, Wilhelm, Williamson, Ziegfendt
Chair: Carlson
Associate Professors: Aufesser, Barone, Francis, Franz, Hempel, King, McKenzie, Nunn, Simmons, Wells, Willis
Assistant Professors: Alexander, Buono, Gutowski, Mechkoff, Placek, Quinn, Sandback, Smith, Spray, Wallace, Whiby.
Lecturers: Bandy, Lasko, Randall

Offered by the Department
Master of Arts degree in physical education.
Major in physical education with the A.B. degree in liberal arts and sciences.
Minor in special education.
Minor in physical education.

Physical Education Major

With the A.B. Degree in Liberal Arts and Sciences

All candidates for a degree in liberal arts and sciences must complete the requirements listed in the section of this catalog under the College of Education.

Preparation for the major. Biology 362; Physical Education 276, Psychology 101, Zoology 108. Four units of activity classes. (16 units.)

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Refer to section of catalog on "Graduation Requirements."

Upper Division Writing Requirement. Passing the University Writing Examination or English 304W or 305W with a grade of C (2.0) or better.


This emphasis does not meet the teaching credential requirements.

Emphasis in Dance


Upper Division Writing Requirement. Passing the University Writing Examination or English 304W or 305W with a grade of C (2.0) or better.

Major. A minimum of 43 upper division units to include Physical Education 376B, 385, 450, 451, 452, 453, 454, 455, 550, 551, 552, 553, 554, 560, 561, 570; and four units selected from Physical Education 341A, 341B, 346B, 346F, 346G, 346H. In addition to course requirements, the student must be a member of the Choreographer's Ensemble and participate in a minimum of three semesters of dance programs. Substitution for such participation will require approval of the Dance Committee. This emphasis does not meet the teaching credential requirements. Physical Education 398 (3 units). Supervised Field Experience (in an advanced dance area) may be substituted for Physical Education 453.

Physical Education Major*

For the Single Subject Teaching Credential

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the College of Education.

This major may be used by students as an undergraduate major for the A.B. degree in applied arts and sciences.

Elementary/Secondary

Preparation for the major. Biology 362, Physical Education 190, 265, 276; Psychology 101, Zoology 108. (16 units.)

Upper Division Writing Requirement. Passing the University Writing Examination or English 304W or 305W with a grade of C (2.0) or better.

Major. A minimum of 41 upper division units to include Physical Education 340, 347, 361, 367A, 380, 385, 560, 561, 568, 570; two units from team sports (346A, 346B); two units from individual sports (346C, 346D, 346H, 346J); and six units from Physical Education 322, 331, 341 or 346.

*The major for the Single Subject Teaching Credential has been submitted to the Commission on Teacher Credentialing. Consult department to verify current program requirements.

Adapted Physical Education Credential

Admission Categories

Level I: Physical Education major with an interest in adapted physical education, completion of a minimum of 45 units with a GPA of 2.5 or better, and official application to the Coordinator of Adapted Physical Education.

Level II: Physical Education major with a minimum of 2.75 after 90 units including the completion of Physical Education 371, 560, 561, 567, 568 and at least two units of Physical Education 368, and official application to the Coordinator of Adapted Physical Education.

Level III: Certified. Completion of all courses required for physical education major in the single subject teaching credential major, all classes for the certification including completion of the entire student teaching experience. (Preliminary credential) The student must have a 3.0 average and no grade lower than C in all the academic classes required to be certified. A required course in which a grade lower than C is earned may be repeated only with prior approval of the coordinator.
Pre-Service Program
Candidates for this program in adapted physical education must complete the requirements for the single subject teaching credential in physical education, apply for the program, be accepted, and complete the following specialist course work:
1. Adapted Program: Minimum of 15 units. Physical Education 567, 568, 667, 672, 398* (1 unit), and Special Education 501.
2. Practical Experience and Student Teaching: The candidate must complete four units of Physical Education 368 and a full-time student teaching experience in adapted physical education.

In-Service Program
Candidates for this program in adapted physical education must complete the requirements for the single subject teaching credential in physical education, apply for the program, be accepted, and complete the following specialist course work:
1. Adapted Program: Minimum of 15 units. Physical Education 567, 568, 667, 672, 683 and 398* (1 unit).
2. Practical Experience and Student Teaching: The candidate must complete four units of Physical Education 368 and a full-time student teaching experience in adapted physical education or equivalent experience.

* Approved by Coordinator, Adapted Physical Education

Dance Minor
The minor in dance consists of a minimum of 24 units in physical education to include Physical Education 361, 368 and a full-time student teaching experience in adapted physical education. Additional prerequisites required.

Physical Education Minor
Sport Skills and Coaching Area: A minimum of 20 units to include Psychology 101; Physical Education 265*, 276, 346-1, 570; four units selected from the Physical Education 331 series; two units of Physical Education 398; and two units selected from Physical Education 346A, 346B, or 369.
Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

Certificate in Exercise Leadership
This program is designed to prepare individuals interested in working in preventive and rehabilitative exercise programs for the certifications of (1) Exercise Technologist, (2) Fitness Instructor, and (3) Exercise Specialist which are awarded by the American College of Sports Medicine (ACSM).
Prerequisites for the program are an undergraduate degree in any major and previous work in physical activity programs. Applications should be made to the director of the certificate program.
Thirty units are required to include Biology 572, Physical Education 562, 663, 666, 668, 669, 796 (6 units with SDSU Adult Fitness Program), and 798 (6 units). With the approval of the graduate adviser, the units may be applied to a graduate degree program in physical education.
Recommendations for application to the American College of Sports Medicine for ACSM certification will be made based on completion of course work with a GPA of 3.0 or better and fulfilling basic requirements for specific certification set by ACSM.

Types of Activity Courses
Adapted physical education classes to care for special needs are offered. The content of these courses is designed to provide each student an opportunity to participate in many activities of carry-over value, developmental nature and recreational interest. An opportunity is afforded students to participate in competitive sports in the extramural and intramural programs.

LOWER DIVISION COURSES
Courses offered for one unit credit meet two hours per week or equivalent. "A" signifies a beginning class, "B" intermediate.

100. Exercise and Health (3)
Two lectures and two hours of activity
Scientific bases of relationships between exercise and health and application of these principles to individual fitness appraisal and regimen.
102A-102B. Conditioning (1-1)
103A-103B. Jogging (1-1)
104A-104B. Weight Training (1-1)
105. Individual Adaptives (1)
Prerequisite: Consent of instructor
A health history record is required of each student. Individual exercise programs for those who are handicapped in some respect, or who have functional defects or deficiencies amenable to improvement through exercise. May be repeated for credit.
106A-106B. Basketball (1-1)
109A-109B. Soccer (1-1)
110A-110B. Volleyball (1-1)
111A-111B. Softball (1-1)
112A-112B. Track and Field (1-1)
113A. Field Hockey (1)
116A. Golf (1-1)
117A-117B. Archery (1-1)
118A-118B. Tennis (1-1)
119A-119B. Bowling (1-1)
120A-120B. Badminton (1-1)
122A-122B. Fencing (1-1)
123A-123B. Racquetball (1-1)
124A-124B. Sailing (1-1)
125A-125B. Men's Gymnastics Apparatus (1-1)
126A-126B. Ice Skating (1-1)
129A-129B. Swimming (1-1)
130A-130B. Synchronized Swimming (1-1)
132A-132B. Ballroom Dance (1-1)
133A. Folk and Square Dance (1-1)
135A. Advanced Folk Dance (1) II
Prerequisite: Physical Education 133B.
134A-134B. Modern Dance (1-1)
135A-135B. Ballet (1-1)
136A-136B. Jazz (1-1)
137A. Aerobic Dance (1)
138. Selected Activities (1)  
May be repeated with new activity for additional credit. See Class Schedule for specific content.

139. Competition Fitness (1) Cr/NC  
Two hours of activity.  
Fitness program for student wishing to prepare for high-level competitive athletics. Theoretical aspects included. Maximum credit one unit applicable to a bachelor's degree and athletic eligibility.

140A. Sabre Fencing (1)  
141A-141B. Martial Arts (1-1)  
Physical Education 141A is prerequisite to 141B.

145. Waterskiing (1)

146. Surfing (1)

150A-150B. Horseback Riding (1-1)  
Physical Education 150A is prerequisite to 150B.

153. Introduction to Dance (2)  
Dance as an art form with emphasis on the development of contemporary trends; American dance personalities and their contributions.

154. Rhythmic Analysis Related to Movement (2)  
Music as related to movement; notation and simple music forms applied to all movement activities; percussion accompaniment; writing of percussion scores, music repertoire for dance.

171. Intercollegiate Practicum in Athletics (1) I, II Cr/NC  
Maximum combined credit for any combination of 171 series is four units. (Formerly numbered Physical Education 339.)

Offered in Fall
A. Basketball  
Offered in Spring  
D. Gymnastics
B. Cross Country  
G. Volleyball
C. Football  
H. Baseball
D. Gymnastics  
I. Golf
E. Swimming  
J. Softball
F. Soccer  
K. Tennis

190. Skill Competency in Physical Education (2) Cr/NC  
Four hours of activity.  
Designed for potential physical education majors and minors as a prerequisite to all professional teaching method course offerings. Proficiency tests will be given in each area commonly taught in secondary physical education.

241. Physical Education of Children (2) I, II  
Four hours of activity.  
Scientific principles, programs, activities, and instructional techniques for physical education in elementary schools. Practical field experience with elementary students. Not open to physical education majors. (Formerly numbered Physical Education 141.)

265. Techniques in Athletic Training (2) I, II  
One lecture and three hours of laboratory.  
Prerequisite: Zoology 108  
Athletic training techniques and emergency field care of athletic injuries. Theory and techniques of basic athletic first aid, emergency procedures including CPR, bandaging and taping. (Formerly numbered Physical Education 165.)

276. Introduction to Sport and Physical Education (2) I, II  
Overview of discipline of physical education. Development of a basic philosophy and background for entering profession. (Formerly numbered and entitled Physical Education 176, "Foundations of Physical Education").

296. Experimental Topics (1-4)  
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.
346. Practicum: Physical Education Activities for Secondary Schools (2)
Four hours of activity.
Prerequisite: Skill competencies for the specific activities of that section as determined by the instructor.

347. Leadership for Physical Education (3) I, II
Two lectures and two hours of activity.
Prerequisite: Physical Education 365.
Theory and development of leadership behavior of physical educators, emphasizing leadership qualities unique to diverse physical activity settings.

350. Ballet for Professional Dance (2) I, II
Four hours of activity.
Prerequisite: Physical Education 135A and 135B.
Advanced work in ballet to enhance performance skills of dancers interested in career in dance.

352. Workshop in Dance (1-2)
Two hours per unit.
Prerequisite: Completion of lower division prerequisites for emphasis in dance.

361. Weight Training and Physical Fitness (2) I, II
One lecture and two hours of activity.
Circulorespiratory endurance, muscular strength and endurance, selection and care of equipment and facilities, and programs in the areas of flexibility, weight training and aerobics. (Formerly numbered Physical Education 345A.)

362. Exercise Physiology Laboratory (1)
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Physical Education 561.
Laboratory experiences in the application of exercises and the analysis of the results.

364. Kinesiology-Biomechanics Lab (1)
Three hours of laboratory per unit.
Prerequisites: Physical Education 560 and 563.
Experiments in application of kinesiology and biomechanics to human movement.

366. Adapted and Special Physical Education Laboratory (1-4)
Three hours of laboratory per unit.
Prerequisite: Consent of department chair.
Continuation of development of modern dance skill with emphasis on function of alignment and articulation of the extremities in motion.

371. Physical Growth and Development (3)
Principles of human growth; performance as affected by developmental levels and individual differences in structure and function.

376A. History and Philosophy: Physical Education and Sport (3)
Prerequisite: Physical Education 276.
Integrated approach to understanding of historical, philosophical, and sociological forces shaping development of physical education and sport. (Formerly numbered Physical Education 376.)

376B. History and Philosophy: Dance (3) II
Prerequisite: Physical Education 153.
Integrated approach to understanding of historical, philosophical, and sociological forces shaping development of dance. (Formerly numbered Physical Education 556.)

380. Organization and Administration of Physical Education (3)
Organization of physical education programs in the public schools. Includes curriculum development, program content, legal bases, materials, facilities and constraints in the discipline of physical education.

385. Measurement and Evaluation in Physical Education (3)
Use of testing and measurement to improve and evaluate instruction. Concepts of elementary statistics, computer use, objectives definition, test construction, test evaluation, and test program administration. (Formerly numbered Physical Education 585.)

398. Supervised Field Experience (1-3) Cr/NC
Prerequisite: Consent of department chair.
Supervised practical experience in the area of physical education. Maximum credit six units.

450. Dance Technique: Alignment (3)
Six hours of activity.
Prerequisite: Completion of preparation for the major in physical education with emphasis in dance.

451. Dance Technique: Movement Patterns (3)
Six hours of activity.
Prerequisites: Physical Education 450 and 560.
Continuation of development of modern dance skill with emphasis on function of alignment and articulation of the extremities in motion.

452. Dance Technique: Complex Movement Patterns (3)
Six hours of activity.
Prerequisite: Physical Education 451.
Advanced modern dance techniques based on skills developed in Physical Education 450 through Physical Education 452 with emphasis on performance qualities in projection, vitality, and executing.

453. Dance Technique: Performance Qualities (3)
Six hours of activity.
Prerequisite: Physical Education 452.
Advanced modern dance techniques based on skills developed in Physical Education 450 through Physical Education 452 with emphasis on performance qualities in projection, vitality, and executing.

454. Elementary Improvisation (1)
Two hours of activity.
Prerequisite: Completion of lower division prerequisites for emphasis in dance.
Exploring improvisation through specific stimulus leading to the acquisition of basic improvisational skills.

455. Intermediate Improvisation (1)
Two hours of activity.
Prerequisite: Physical Education 454.
Practice in more complex arrangements of improvisation.
456. Dance Pedagogy (2)
Four hours of activity.
Prerequisite: Completion of preparation for the major in physical education with emphasis in dance.
Teaching modern dance in the commercial studio environment.

476. Contemporary Sociocultural Aspects of Physical Activity (3)
Prerequisite: Physical Education 376A.
Historical, anthropological and cultural factors influencing development of sport and physical education in America, and current sociological, philosophical, sociopsychological; and comparative factors influencing role and significance of sport and physical education in modern American society.

478. International Physical Education and Sport (3)
Prerequisite: Physical Education 476.
Analyses of physical education and sport programs in selected cultural ideologies, and of international sport competitions.

496. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

499. Special Study (1-3)
Prerequisite: Consent of department chair.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

550. Choreography: Basic Elements (2)
Four hours of activity.
Prerequisite: Completion of preparation for the major in physical education with emphasis in dance.
Using concepts of space, time, and energy to investigate and explore basic elements of choreography. Studies and compositions emphasizing solo and small group works.

551. Choreography: Large Groups (2)
Four hours of activity.
Prerequisite: Physical Education 550.
Introducing large group works, solo and small group work in organizing more complex arrangements of the basic elements of dance composition. Utilizing music and sound as aural contributions to choreography.

552. Choreography: Form and Content (2)
Four hours of activity.
Prerequisite: Physical Education 551.
Approaching dance as a fundamental means of communication. Recognizing the relationship between form and content.

553. Choreography: Recital (2)
Four hours of activity.
Prerequisite: Physical Education 552.
Choreography of solo and group works utilizing symbiotic relationship of movement, sound, lighting, costuming, and other interdisciplinary media. Presentation of a recital.

557. Dance Criticism (2)
Prerequisite: Physical Education 376B.
Artistic aspects of dance in general and specifically modern dance. Professional preparation and function of the dance critic.

560. Applied Anatomy and Kinesiology (3)
Prerequisites: Biology 362 and Zoology 108.
Anthropology, syndesmology and myology, with emphasis on movement analysis. Muscle groups and their functional relationships. Application of simple mechanical principles to movement analysis.
Chemical Physics Major
With the B.S. Degree in Applied Arts and Sciences
Preparation for the major. Chemistry 200, 201, 231, and 251; Mathematics 150, 151 and 152; Physics 195, 195L, 196, 196L, 197, 197L. (44 units.) Recommended: Mathematics 107.

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.


Physics Major
With the A.B. Degree in Liberal Arts and Sciences
All candidates for a degree in liberal arts and sciences must complete the requirements listed in the section of this catalog on "Graduation Requirements." A minor in mathematics is required. It should include Mathematics 150, 151, 152, 340A-340B, and three units from Mathematics 521A, 532 or 534A. Mathematics 302 is acceptable for students preparing for elementary or secondary teaching. Students planning graduate work in physics should take additional mathematics beyond these listed.

Preparation for the major. Chemistry 200, 201; Mathematics 150, 151, 152; Physics 195, 195L, 196, 196L, 197, 197L. (35 units.) Recommended: Mathematics 107.

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Students should choose French, German or Russian. Refer to section of catalog on "Graduation Requirements."

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 24 upper division units in physics to include Physics 311, 350A, 354A, 357, 400A, 460, and two courses selected from Physics 313, 354B, 400B and 510.

Physics Minor
With the B.S. Degree in Applied Arts and Sciences
All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements." Individual master plans for each student are filed with Evaluations.

A minor is not required with this major.

Preparation for the major and the minor consist of basic requirements in the lower and upper division for all students plus additional upper division requirements in one of the following areas:
(a) Foundations of Physics, (b) Scientific Instrumentation, (c) Modern Optics, (d) Radiation Physics, (e) Senior Research.

Basic Requirements for all Students
Preparation for the major, Chemistry 200, 201; Mathematics 150, 151 and 152; Physics 195, 195L, 196, 196L, 197, 197L. (35 units.) Recommended: Mathematics 107.

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.


Areas of Specialization
In addition to the basic requirements, the student must complete the requirements in one of the following areas:

(a) Foundations of Physics
Required: Physics 510, and 532 or 564.
Recommended: Physics 350B, 552.
Strongly recommended: Physics 532, 564.

(b) Scientific Instrumentation
Required: Physics 513, 516A.
Recommended: Physics 515, 516B.
Strongly recommended: Physics 518, 520.

(c) Modern Optics
Required: Physics 306, 552, 553.
Recommended: Physics 516A, 532.

(d) Radiation Physics
Required: Physics 302, 560, 561, 565.
Recommended: Physics 513, 515, 563, 564.

(e) Senior Research
Students taking this area of specialization must be sponsored by a member of the faculty.
Required: Physics 498A-498B and a minimum of four (4) additional upper division units approved by faculty sponsor.
Recommended: Additional Physics 499 in conjunction with 498A-498B.

Physics Minor
The minor in physics consists of a minimum of 15 units in physics, 11 units of which must be in upper division courses. The department requires that the upper division units for the minor be selected from the courses in one of the areas listed below. Prerequisites: Physics 180A-180B or 185, 195L, 196, 196L, 197, 197L; Mathematics 152.


Scientific Instrumentation (also appropriate for all science majors above). Physics 311, 313 and 510 must be taken. One or more additional courses to be selected from Physics 516A, 516B, 518, 520.

Modern Optics (appropriate for all science and engineering majors). Physics 306 and 553 must be taken. Additional courses may be selected from Physics 311, 313, 354A, 400A, 499, 552, 564, 570.

Radiation Physics. In lieu of the prerequisites listed above, a student may substitute Physics 180A-180B and 182A-182B, Mathematics 152. (Suitable for all majors, particularly recommended for life science majors.) Physics 302, 303, 311, 561, and three units of electives.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.
103. Physics for Poets (3) Physics as natural philosophy. How physical theories grow and change through interaction with experiment. Holography, black holes, fusion, acoustics, lasers, and other topics form a framework through which the laws of physics and their philosophical and historical foundations are explored.

103L. Physics for Poets Laboratory (1) Prerequisite: Credit or concurrent registration in Physics 103. Experiments designed to illustrate how our perception of the world is changed through experiment and observation. Laboratory topics illuminate concepts covered in Physics 103.

105. Physics of Hi-Fi (3) Fundamental laws of physics as applied to high fidelity music systems including speakers, amplifiers, tape machines, turntables, tuners, and room acoustics. Compares and contrasts applied technology and fundamental principles of physics.

107. Introductory Physics with Laboratory (4) I, II Three lectures and three hours of laboratory. Some of the more important phenomena and concepts in physics with practical illustrations and applications. Not open to students with credit for Physics 115 (formerly numbered Physics 115A-115B), 180A-180B, 195, 195L, 196, 196L, 197, 197L.

109. Physics of Musical Sounds (3) Physiological properties of sound, the ear and its perception of sounds, the effects of acoustical environment, the behavior of musical instruments, and the various applications of electronics to the production, reproduction and compositions of music.

115. Elementary Physics with Laboratory (4) I, II Two lectures, one discussion and three hours of laboratory. Prerequisites: Two years of high school mathematics. Course devoted to the fundamental physical concepts underlying energy, its conversion, utilization and conservation. Not open to physics majors. Foundations of wave motion, behavior of light, energy, mass, evolution of ideas concerning planetary motion. Emphasis on evolution of fundamental concepts. Not open to students with credit in 180A or 195, 195L.

149. Special Study (1-2) I, II Prerequisite: Consent of supervising instructor. Individual study and laboratory work in the area of the student's major interest. Each student will be assigned a member of the staff who will supervise his work.

180A-180B. Fundamentals of Physics (3-3) I, II Prerequisites: Credit or concurrent registration in Mathematics 121 or 150. Physics 180A is prerequisite to 180B. Recommended: For Physics 180A, concurrent registration in Physics 182A; for Physics 180B, concurrent registration in Physics 182B. Course provides a thorough basis in mechanics, electricity, magnetism, optics, and modern physics in a two-semester calculus-based sequence. Intended mainly for life science majors. Physics 180A not open to students with credit in Physics 195. Physics 180B not open to students with credit in Physics 186.

182A-182B. Physical Measurements (1-1) I, II Three hours of laboratory. Prerequisite for 182A: Credit or concurrent registration in Physics 180A. Prerequisite for 182B: Credit or concurrent registration in Physics 180B. A laboratory course to accompany Physics 180A-180B. Semester I: Properties of matter, mechanics, sound, and wave motion. Semester II: Electricity, DC circuits, oscilloscope measurement techniques, electric and magnetic fields, and optics. 182A: Not open to students with credit in Physics 195L. 182B: Not open to students with credit in Physics 195L.

195. Principles of Physics (3) I, II Prerequisite: Credit or concurrent registration in Mathematics 150. This course is designed to give a thorough understanding of the fundamental principles of physics in the areas of mechanics and wave motion.
311. Electronics for Scientists (3) I, II
Two lectures and three hours of laboratory.
Prerequisites: Physics 180B and 182B, or 196 and 196L.
AC and DC circuits, diodes, transistors, conventional and operational amplifiers. Designed to introduce science majors to modern electronic devices and their utilization in scientific instrumentation.

313. Advanced Electronics (3) I, II
Two lectures and three hours of laboratory.
Prerequisite: Physics 311.
Conventional and operational amplifiers, oscillators, analog to digital conversion, pulse and digital electronics. Emphasis is on applications to modern scientific instrumentation.

350A-350B. Classical Mechanics (3-3) I, II
Prerequisites: For 350A, Physics 197, 197L and credit or concurrent registration in Mathematics 340A or 530. For 350B, Physics 350A and credit or concurrent registration in Mathematics 340B or 531.
Newtonian mechanics, wave motion, Lagrange's equations, Hamilton's equations, generalized coordinates, normal coordinates, small oscillations, special theory of relativity.

354A-354B. Modern Physics (3-3) I, II
Prerequisites: For 354A, Physics 197, 197L and credit or concurrent registration in Mathematics 340A or 530. For 354B, Physics 354A and credit or concurrent registration in Mathematics 340B or 531.

357. Advanced Physical Measurements (3) I, II
One lecture and six hours of laboratory.
Prerequisites: Physics 197, 197L, and Physics 311.
A course which stresses both laboratory experiments and techniques of data and error analysis. The experiments are taken from several of the major areas of physics.

400A-400B. Classical Electromagnetism (3-3)
Prerequisites: For 400A, Physics 197, 197L and credit or concurrent registration in Mathematics 340A or 530. For 400B, Physics 400A and credit or concurrent registration in Mathematics 340B or 531.
Electrostatics, magneto-electrics, electromagnetic induction, Maxwell's equations, radiation and wave propagation.

460. Thermal Physics (3)
Prerequisite: Physics 354A.

496. Selected Topics in Physics (1-4) I, II
Prerequisite: Consent of instructor.
Selected topics in classical and modern physics. May be repeated with consent of instructor. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units.

498A. Senior Research (1) I, II Cr/NC
One discussion period and two additional hours per week to be arranged.
Prerequisite: Senior standing in physics and an acceptable plan for graduation within one year.
Selection and design of individual research project. Oral and written progress reports.

498B. Senior Research (2) I, II
Two discussion periods and four additional hours per week to be arranged.
Prerequisite: Physics 498A.
Laboratory work, progress reports, oral and written final reports.

499. Special Study (1-3) I, II
Individual study or laboratory work on a special problem in physics selected by the student. Each student will be assigned a member of the staff who will supervise his work. Credit, hours and topics to be arranged in each case. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

510. Quantum Mechanics (3)
Prerequisites: Physics 350A, 354B; Mathematics 340B or 531.
The mathematical and physical foundations of the quantum theory in terms of Schroedinger's wave mechanics. Applications to the properties of atoms, quantum chemistry, and nuclear structure.

513. Electronics of Nuclear Instrumentation (1)
Prerequisites: An electronics course and credit or concurrent registration in Physics 561.
Operation and utilization of modern solid-state devices as used in nuclear instrumentation.

515. Microprocessor Instrumentation (3)
Two lectures and three hours of laboratory.
Prerequisite: Credit or concurrent registration in Physics 513.
Theory and practice of microcomputer interfacing and control techniques, including microcomputer architecture on a block-diagram level, bus structure, and I/O signals. Assembly language programming and applications to I/O involving instrumentation peripherals.

520. Microprocessor Instrumentation (3)
Two lectures and three hours of laboratory.
Prerequisite: Credit or concurrent registration in Physics 513.
The electronics of microprocessor-based computer and control systems. Assembly language programming. Interfacing of analog inputs and outputs. The microcomputer as a multipurpose signal processing instrument.

524. Physical Principles of Remote Sensing (3) I
Prerequisites: Physics 396, Mathematics 340A.
Physical principles of electromagnetic techniques in remote sensing. Topics include electromagnetic scattering, optical and radar image acquisition problems.

532. Solid State Physics (3) I
Prerequisites: Physics 350A, 354B; Mathematics 340B or 531.
Elastic, thermal, electric, magnetic and optical properties of solids. Introduction to the energy band theory of solids, with applications to semiconductors and metals.

542. Acoustics (3)
Prerequisite: Physics 350A.
Wave motion, production, reception, transmission and analysis of sound. Special applications such as environmental noise, underwater and seismic waves.

552. Modern Optics and Lasers (3)
Prerequisite: Physics 306.
Electromagnetic theory, matrix methods of optics, propagation of Gaussian beams, optical resonators, interaction of radiation and atomic systems, theory of laser oscillation, nonlinear optics, specific laser systems, optical detectors, applications of lasers in physics.
553. Modern Optics Laboratory (2)  
   Six hours of laboratory.  
   Prerequisite recommended: Credit or concurrent registration in Physics 552.  
   Experiments in various fields of modern optics such as holography, physics of lasers,  
   Fourier transform spectroscopy, Raman spectroscopy, light modulation techniques, fiber  
   optics, spatial filtering, diffraction grating spectroscopy, radiometry, and nonlinear optics. May  
   be repeated with new content with the approval of the instructor for a maximum of four units.  

560. Physics of Nuclear Medicine (1) II  
   Three hours of laboratory.  
   Prerequisite: Physics 561.  
   Topics and experimental problems in the diagnostic use of radioactive isotopes in nuclear  
   medicine.  

561. Nuclear Radiation Physics Laboratory (3)  
   One lecture and six hours of laboratory.  
   Prerequisites: Physics 303 or 357. Mathematics 152.  
   Techniques and instrumentation for the detection, identification and measurement of the  
   properties of nuclear radiations and particles, and their use in the study of nuclear reactions.  

563. Physics of Nonionizing Radiation (1)  
   Three hours of laboratory.  
   Prerequisite: Physics 303 or 357.  
   Topics and experimental problems in radiation protection in nonionizing radiation.  

564. Nuclear and Elementary Particle Physics (3)  
   Prerequisite: Physics 354B.  
   Nuclear and elementary particle phenomena including nuclear structure of reactions,  
   nuclear devices, elementary particle symmetry and structure, and experimental methods.  

565. Physics of X-Rays (1) I  
   Three hours of laboratory.  
   Prerequisite: Physics 561.  
   Topics and experimental problems in the use of X-rays.  

570. Relativity (3)  
   Prerequisite: Physics 354A, 400A, Mathematics 340B or 531. Recommended: Mathematics  
   149 or 520A.  
   Relative coordinates, Lorentz transformation, covariant formation of the laws of physics,  
   applications of special relativity, introduction to curved space time, cosmology.  

596. Special Topics in Physics (1-4) I, II  
   Selected topics in classical and modern physics. May be repeated with the consent of the  
   instructor. See Class Schedule for specific content. Limit of nine units of any combination of  
   296, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units.  

GRADUATE COURSES  
Refer to the Graduate Bulletin.
### LOWER DIVISION COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>Introduction to Politics and the American Political System</td>
<td>3</td>
<td>Basic political concepts as applied to the American political system. The American political system as a constitutional democracy with reference to specific topics.</td>
</tr>
<tr>
<td>102</td>
<td>Introduction to American and California Government and Politics</td>
<td>3</td>
<td>Political processes and institutions in the United States and California. Considers a variety of public policy issues such as environmental quality, health, education, relation between government and business, taxation, and foreign affairs as reflected in the dynamics of national and state politics.</td>
</tr>
<tr>
<td>103</td>
<td>Introduction to Comparative Government</td>
<td>I, II</td>
<td>Analytical models and techniques for examination of the problems of decision making and control in various political systems. Emphasis on patterns of political action in various cultural contexts.</td>
</tr>
<tr>
<td>201</td>
<td>Elementary Statistics for Political Science</td>
<td>3</td>
<td>Prerequisites: Political Science 101 and 102 and qualification on the Mathematics Placement Examination. Quantitative methods in political science. Tabular and graphic presentation; measures of central tendency, simple correlation and sampling techniques. Students with credit or concurrent registration in another statistics course will be awarded a total of four units for the two (or more) courses.</td>
</tr>
<tr>
<td>296</td>
<td>Experimental Topics</td>
<td>1-4</td>
<td>Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.</td>
</tr>
</tbody>
</table>

### UPPER DIVISION COURSES (Intended for Undergraduates)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td>310</td>
<td>Politics and the Arts</td>
<td>3</td>
<td>Prerequisites: Political Science 101 and 102. The contribution of the artistic media to the activity and understanding of politics.</td>
</tr>
<tr>
<td>495</td>
<td>Internship in Politics</td>
<td>2-6</td>
<td>Prerequisites: Three upper division units within Field III and consent of instructor. Students will be assigned selectively to functional areas of politics, such as political party headquarters, elective public offices and nonpartisan political groups for work under joint supervision of activity heads and the course instructor. Participation will include project and internship conferences. (Formerly numbered Political Science 340.)</td>
</tr>
<tr>
<td>496</td>
<td>Experimental Topics</td>
<td>1-4</td>
<td>Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.</td>
</tr>
<tr>
<td>497</td>
<td>Investigation and Report</td>
<td>(3-3)</td>
<td>Senior thesis. Analysis of special topics. Admission by permission of instructor.</td>
</tr>
<tr>
<td>499</td>
<td>Special Study</td>
<td>1-3</td>
<td>Prerequisites: Twelve upper division units in political science and consent of the instructor. Individual study. Maximum credit six units.</td>
</tr>
</tbody>
</table>

### Political Theory (Field I)

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>301A-301B</td>
<td>History of Western Political Thought</td>
<td>3-3</td>
<td>Prerequisite: Political Science 301A is prerequisite to 301B. Development of political ideas from the Golden Age of Greece until the French Revolution. Relevance of theory to a critical understanding of concrete political and social problems involving power, freedom, equality, justice and action. 301A emphasizes Plato, Aristotle, Augustine, Aquinas, and Marsilius of Padua. 301B stresses major political theorists such as Machiavelli, Hobbes, Locke, and Rousseau.</td>
</tr>
<tr>
<td>302</td>
<td>Modern Political Thought</td>
<td>3</td>
<td>Major writers of political thought in the last two centuries, including Burke, J.S. Mill, Freud, Marx, Weber and Sartre. The following topics may be covered: conservatism, liberalism, utilitarianism, socialism, fascism, positivism and existentialism.</td>
</tr>
<tr>
<td>303</td>
<td>Socialist Political Thought</td>
<td>(3)</td>
<td>Socialist thought from a historical perspective.</td>
</tr>
<tr>
<td>304</td>
<td>Socialist Political Thought</td>
<td>(3)</td>
<td>Prerequisites: Political Science 101 or 102, and 301B or 302. Selected topics in socialist thought.</td>
</tr>
<tr>
<td>305</td>
<td>American Political Thought</td>
<td>(3)</td>
<td>The origin and development of American political ideas from colonial times to the present. Meets the graduation requirement in the United States Constitution. When taken with Political Science 330, 321 or 522, will also meet all requirements in American Institutions.</td>
</tr>
<tr>
<td>306</td>
<td>Democracy and Mass Society</td>
<td>(3)</td>
<td>Origin and development of theories of democracy and application of democratic ideas to contemporary political life. (Formerly numbered Political Science 372.)</td>
</tr>
<tr>
<td>313</td>
<td>The Theory of Political Inquiry</td>
<td>(3)</td>
<td>Philosophical bases of science with reference to political science. Concepts, concept formation, theory building and verification.</td>
</tr>
</tbody>
</table>

### Research Methods (Field II)

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>515A-515B</td>
<td>Research Methods in Political Science</td>
<td>(3-3)</td>
<td>Prerequisites: Political Science 201. Political Science 515A is prerequisite to 515B. The research process: from research design through data processing, analysis and interpretation. Problems of application to election statistics, census data, roll call records, sample survey data and biographical information.</td>
</tr>
</tbody>
</table>

### American Government and Politics (Field III)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>320</td>
<td>American Institutions</td>
<td>(3)</td>
<td>The principles of the Constitution of the United States of America, and a survey of the political and social institutions which have developed under the Constitution. Meets the graduation requirement in the United States Constitution and California state and local government. When taken with Political Science 305, 321 or 522, will also meet all requirements in American Institutions.</td>
</tr>
<tr>
<td>321</td>
<td>State Politics</td>
<td>(3)</td>
<td>Politics and policy making at the state and local levels, relations among national, state, and local governments. Emphasis on California problems and politics. Meets the graduation requirement in California government. When taken with Political Science 305 or 320, will also meet all requirements in American Institutions.</td>
</tr>
<tr>
<td>325</td>
<td>Political Behavior</td>
<td>(3)</td>
<td>Prerequisites: Political Science 102. Social and attitudinal variables in political behavior. Quantitative research data as used in electoral studies. May include a substantial amount of material about foreign political systems.</td>
</tr>
<tr>
<td>326</td>
<td>Political Communication</td>
<td>(3)</td>
<td>Communication as a political process, the effects of political communication on individuals and groups. May include a substantial amount of material about foreign political systems.</td>
</tr>
<tr>
<td>334</td>
<td>Politics of the Environment</td>
<td>(3)</td>
<td>Analysis of political process as it shapes environmental policy in a world characterized by finite resources. Emphasis on expanding national and international claims made upon these resources. May include a substantial amount of material about foreign political systems.</td>
</tr>
<tr>
<td>335</td>
<td>Public Policy</td>
<td>(3)</td>
<td>Prerequisites: Political Science 101 and 102. Theory and practice of process of formulating public policy roles of administrators, legislators, courts, interest groups and political parties, public agencies and public interest, case studies in formulating public policies. May include a substantial amount of material about foreign political systems.</td>
</tr>
</tbody>
</table>
347A-347B. American Constitutional Law (3-3)
Substantive principles of American constitutional law. Rights and liberties protected by the Constitution against action of federal and state governments. May include problems of judicial review, federal system, separation of powers, nature of selected congressional-presidential powers. Meets graduation requirement in United States Constitution. (Formerly numbered Political Science 547A-547B.)

348. The Supreme Court and Contemporary Issues (3)
Recent decisions of the Supreme Court of the United States and their relationship to contemporary political and social issues. Not open to those students with credit for Political Science 347A-347B.

350. Jurisprudence (3)
Prerequisite: Political Science 101 or 102 or three upper division units within Field IV. Theoretical foundations of law, relationship between legal and political philosophy; development of law and legal systems. (Formerly numbered Political Science 550.)

354. Special Problems in Public Law (3)
Prerequisites: Political Science 101 and 102, and three upper division units within Field IV. Exploration of selected issues in the field of law.

Comparative Politics (Field V)

UPPER DIVISION COURSES
(Intended for Undergraduates)

356. Governments of Continental Europe (3)
The political systems of countries of western continental Europe.

357. Government of England (3)
The structure and functioning of the English parliamentary system with emphasis on present-day political principles and parties.

358. Comparative Communist Political Systems (3)
The interrelations between the theory and practice of modern communism as found in representative communist systems. (Formerly numbered Political Science 558.)

359. Government and Politics in the Soviet Union (3)
Theory and practice of government in the former Soviet Union, with some attention to foreign affairs.

361. Governments and Politics of the Developing Areas (3)
Prerequisite: Political Science 101 or 103. Internal political systems; governmental structures and the foreign policies of developing nations. (Formerly numbered Political Science 561.)

362. Governments and Politics of East Asia (3)
The internal political structure and foreign policies of China, Japan and Korea. (Formerly numbered Political Science 562.)

363. Governments and Politics of the Middle East (3)
The governmental and political structures of representative states in the Middle East including Turkey, Israel and the Arab states. (Formerly numbered Political Science 563.)

364. Political Change in Modern Africa (3)
Dynamics of social and political change in modern Africa.

370. Political Violence (3)
Prerequisite: Political Science 101, 102 or 103. Underlying conditions, expressions and consequences of violence within political systems.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

385. Comparative Political Systems (3)
Prerequisite: Political Science 103. An examination of selected political and governmental systems for purposes of comparative study and analysis to determine similarities, differences and general patterns and universals among political systems.
580. Comparative Public Policy (3)  
Prerequisite: Political Science 103 or 335.  
Ways that political and social factors shape policy choices, implementation strategies, and policy outcomes in selected countries, emphasis on industrialized nations. Policy areas chosen from: education, health, nutrition, crime, transportation, housing, energy, population control, poverty, unemployment, inflation.

566. Political Change in Latin America (3)  
Prerequisite: Political Science 101 or 103.  
General pattern of politics and political development in Latin America with an emphasis on those features which condition domestic and foreign policy making.

567. Political Systems of Latin America (3)  
Prerequisite: Political Science 566.  
Domestic and international politics of selected Latin American states.

568. The Mexican Political System (3)  
Prerequisite: Political Science 101 or 103.  
Principal factors in Mexican governmental decision making: ideology, political groups, tactics of leaders and governmental structure.

International Politics (Field VI)

UPPER DIVISION COURSES  
(Provided for Undergraduates)

375. International Relations (3)  
Dynamics of conflict and cooperation among national, international and transnational factors; contributing political, economic, and social factors.

376. International Organization (3)  
Evolution, functions, achievements and limitations of international organization in modern society. Primary focus on the United Nations.

378. The Conduct of American Foreign Relations (3)  
The legal, administrative and political organizations by which American foreign policies are formulated and implemented.

381. International Relations of the Developing Nations (3)  
Prerequisite: Six units of political science.  
Cooperation and conflict between the developing nations and relations of such nations with the developed countries.

382. International Relations of the Latin American States (3)  
The foreign policies of the Latin American states; the organization of American states; relationships with the United Nations and with the United States.

390. Dynamics of Modern International Crises (3)  
Origins, development and control of selected international crises since World War II.

393. Institute on World Affairs (3)  
Contemporary problems in international relations. May be repeated once for credit with permission of the instructor. See Class Schedule for specific content.

394. Special Problems in International Politics (3)  
Prerequisites: Political Science 101, 102 and three upper division units within Field VI.  
Intensive exploration of selected issues in the field of international politics.

UPPER DIVISION COURSES  
(Also Acceptable for Advanced Degrees)

577. Principles of International Law (3)  
The function of law in the international community: The historical development of the ideas and rules of international law and their place in the modern diplomatic and legal structure.

579. National Security Policy (3)  
Objectives, instruments and consequences of national security policy.
PORTUGUESE

UPPER DIVISION COURSES
(Within for Undergraduates)

301. Advanced Oral and Written Composition (3)
Oral and written composition in Portuguese, based on models from modern Portuguese and Brazilian literature.

302. Advanced Oral and Written Composition (3)
Oral and written composition in Portuguese, based on models from modern Portuguese and Brazilian literature.

499. Special Study (1-3) I, II
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

534. Portuguese Literature (3)
A study of important movements, authors and works in the literature of Portugal from its beginnings to the present.

535. Brazilian Literature (3)
A study of the important movements, authors and works of the literature of Brazil from the colonial period to modern times.

Psychology

in the College of Sciences

Faculty
Emeritus: Carlson, Kaplan, O., Kidwell, Leuke, McColom, Peiffer, Psomas, Sand, Segal, Turner, Voeks
Chair: Litrownik
Associate Professors: Brown, DeFon, Fenson, Fragaszy, Hornbeck, Lee, Lynn, McCordick, Price, Scollay, Smith
Assistant Professor: Ingram

Offered by the Department
Master of Arts degree in psychology
Master of Science degree in psychology
Major in psychology with the A.B. degree in liberal arts and sciences
Minor in psychology

Psychology Major

With the A.B. Degree in Liberal Arts and Sciences

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on “Graduation Requirements.”

A minor is not required with this major.

Two plans are provided for the major in psychology: Plan A for those students who wish to extend their liberal arts education in the field of psychology; and Plan B for those students expecting to pursue the study of psychology beyond the A.B. degree.

Plan A

Plan A is for a nonprofessional major in psychology and is designed to provide students with a greater understanding of human behavior as the emphasis in their liberal arts education. The recommended pattern of courses for this program is not designed to facilitate graduate and professional study in psychology.

Preparation for the major. Psychology 101, 110 or 270, 210 and 260. (12 units) Recommended courses in related fields. Six units in general education courses in biology and/or zoology, three units in general education course in philosophy; and six units in general education courses in anthropology and/or sociology.

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Refer to section of catalog on “Graduation Requirements.”

Upper Division Writing Requirement. Passing the University Writing Examination or English 304W with a grade of C (2.0) or better.

Major. A minimum of 24 upper division units in psychology to include Psychology 330, 340, 350 and 351. It is expected that students under Plan A will select, with the assistance of their adviser, a pattern of courses in line with their particular objectives in pursuing Plan A.

Plan B

The purpose of Plan B is to facilitate the specific preparation of those students who wish to pursue graduate and professional preparation in clinical, industrial and personnel, social, and theoretical-experimental psychology.

Preparation for the major. Psychology 101, 210, 260, and 270. (12 units) Recommended courses in related fields. Six units in general education courses in biology and/or zoology; three units in general education courses in philosophy; and six units in general education courses in anthropology and/or sociology.
Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Refer to section of catalog on "Graduation Requirements."

Upper Division Writing Requirement. Passing the University Writing Examination or English 304W with a grade of C (2.0) or better.

Major. A minimum of 24 upper division units in psychology to include Psychology 350, 405, 410, and one of the following: 412, 413, 414, 415, 416, 417, 418 or 419; and ten units selected from courses in consultation with the departmental advisor.

Psychology Minor

Academic Skills 103 is a required prerequisite to this minor (except for Personality and Social). The minor in psychology consists of 18-23 units selected from one of the following areas:

Experimental: Psychology 101, 210, and 270 or equivalent; 14 units of upper division psychology to include Psychology 410 and three of the following: Psychology 316, 414, 416, 417, 419, 587, (23 units).

Industrial/Organization: Psychology 101 and 270 or equivalent; 12 units of upper division psychology to include Psychology 320, 405, and two of the following: Psychology 321, 322, 326, 342 (18-19 units).

Personality and Social: Psychology 101 and 210 or 260; 12 units of upper division psychology of which nine must be selected from Psychology 330, 340, 350 and 351. (18 units.)

Physiological: Psychology 101, 210, 260, and 270 or equivalent; 11 units of upper division psychology to include Psychology 410, 413 and 460. (23 units.)

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

LOWER DIVISION COURSES

101. Introductory Psychology (3) I, II

110. The Evaluation of Psychological Literature (3)

150. Psychology of Individual Adjustment (3)

210. Principles of Learning and Perception (3) I, II

260. Introduction to Physiological Psychology (3) I, II

270. Statistical Methods in Psychology (3) I, II

UPPER DIVISION COURSES

300. Honors Course (1-3)

301-S. Contemporary Problems in Psychology (1) S

305. Parapsychology: Fact and/or Fiction (3) I, II

310. Cognitive Psychology (3) I, II

314. Comparative Animal Psychology (3) II

316. Operant Behavior (3)

320. Personnel and Industrial Psychology (3) I, II

321. Organizational Psychology (3) I, II

322. Consumer Psychology (4)

326. Principles of Personnel Interviewing (3)

330. Developmental Psychology (3) I, II

335. Psychology of Later Maturity (3)

Academic Skills 103 is a required prerequisite to this minor (except for Personality and Social). The minor in psychology consists of 18-23 units selected from one of the following areas:

Experimental: Psychology 101, 210, and 270 or equivalent; 14 units of upper division psychology to include Psychology 410 and three of the following: Psychology 316, 414, 416, 417, 419, 587, (23 units).

Industrial/Organization: Psychology 101 and 270 or equivalent; 12 units of upper division psychology to include Psychology 320, 405, and two of the following: Psychology 321, 322, 326, 342 (18-19 units).

Personality and Social: Psychology 101 and 210 or 260; 12 units of upper division psychology of which nine must be selected from Psychology 330, 340, 350 and 351. (18 units.)

Physiological: Psychology 101, 210, 260, and 270 or equivalent; 11 units of upper division psychology to include Psychology 410, 413 and 460. (23 units.)

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

LOWER DIVISION COURSES

101. Introductory Psychology (3) I, II

110. The Evaluation of Psychological Literature (3)

150. Psychology of Individual Adjustment (3)

210. Principles of Learning and Perception (3) I, II

260. Introduction to Physiological Psychology (3) I, II

270. Statistical Methods in Psychology (3) I, II

UPPER DIVISION COURSES

300. Honors Course (1-3)

301-S. Contemporary Problems in Psychology (1) S

305. Parapsychology: Fact and/or Fiction (3) I, II

310. Cognitive Psychology (3) I, II

314. Comparative Animal Psychology (3) II

316. Operant Behavior (3)

320. Personnel and Industrial Psychology (3) I, II

321. Organizational Psychology (3) I, II

322. Consumer Psychology (4)

326. Principles of Personnel Interviewing (3)

330. Developmental Psychology (3) I, II

335. Psychology of Later Maturity (3)
340. Social Psychology (3) I, II
Prerequisite: Psychology 101.
The major problems and findings concerning group behavior and group membership, the socialization of the individual, and processes of social interaction.

342. Public Opinion Measurement (3)
The history, methods and problems of public opinion and attitude measurement. Emphasis will be placed on the polling of consumers and voters. Students will be given field experience.

347. Psychology of Contemporary Social Problems (3)
Prerequisite: Psychology 101.
Discussion of social issues and problems of importance to the contemporary world, from the point of view of psychological theory, method and knowledge.

350. Abnormal Psychology (3) I, II
Prerequisite: Psychology 101.
The causes, symptoms, and modification of behavior disorders with emphasis on neurosis, psychosis, and personality disorder.

351. Psychology of Personality (3), I, II
Prerequisite: Psychology 101.
Principles of personality functioning and adaption.

365. Drugs and Behavior (3)
Prerequisite: Psychology 101. Recommended: Psychology 260.
The effects of hallucinogens, tranquilizers, stimulants, alcohol and other depressants, on the nervous system, personality and intellectual functioning.

375. Computer Methods in Psychology (3)
Prerequisites: Psychology 101, and credit or concurrent registration in Psychology 270.
Fundamentals of programming in "BASIC" computer language. Application to statistics and other quantitative topics in psychology.

386. Theories of Personality (3)
Prerequisites: Six upper division units in psychology to include one of the following: Psychology 330, 350, or 351.
Theories of personality focusing on the history and development of the area of personality.

405. Psychological Testing and Measurement (3) I, II
Prerequisite: Psychology 270, or a semester of statistical methods in any other department.
Measurement theory and the basic principles of testing. The selection and critical evaluation of group tests of intelligence, personality, aptitude, interest and achievement.

410. Introduction to Experimental Psychology (4) I, II
Two lectures and six hours of laboratory.
Prerequisites: Psychology 210 and 270.
Understanding of experimental design, quantitative methods, and experimental reports as they are applied to all areas of psychology.

412. Experimental Psychology: Social (4) I, II
Two lectures and six hours of laboratory.
Prerequisite: Psychology 410.
Experimental literature, assigned and original laboratory projects in the field of social psychology.

413. Experimental Psychology: Physiological (4)
Two lectures and six hours of laboratory.
Prerequisites: Psychology 260 or 460; and Psychology 410.
Experimental literature, assigned and original laboratory projects in the field of physiological psychology. Small animal surgery, histological and pharmacological techniques.

414. Experimental Psychology: Comparative (4)
Two lectures and six hours of laboratory.
Prerequisite: Psychology 410.
Experimental literature, assigned and original laboratory projects in the field of comparative psychology.

415. Experimental Psychology: Personality and Clinical (4) I, II
Two lectures and six hours of laboratory.
Prerequisite: Psychology 410. Recommended: Psychology 350 or 351 or 386.
Experimental literature, assigned and original laboratory projects in the field of personality and clinical psychology.

416. Experimental Psychology: Learning (4)
Two lectures and six hours of laboratory.
Prerequisite: Psychology 410.
Experimental literature, assigned and original laboratory projects in the field of learning.

417. Experimental Psychology: Primate Behavior (4)
Two lectures and six hours of laboratory.
Prerequisites: Psychology 101, 260 or three units of biology or three units of anthropology; and Psychology 270.
Recommended: Psychology 410.
Experimental literature, assigned and original observational and experimental projects in the field of primate learning and behavior.

418. Experimental Psychology: Child Development (4) I, II
Two lectures and six hours of laboratory.
Prerequisite: Psychology 410.
Recommended: Psychology 330.
Methods, techniques and principles used in the scientific study of child behavior.

419. Experimental Psychology: Memory and Cognition (4)
Two lectures and six hours of laboratory.
Prerequisite: Psychology 410.
Recommended: Psychology 330.
Methods, techniques and principles used in the scientific study of child behavior.

432. Advanced Topics in Developmental Psychology (3)
Prerequisite: Psychology 330.
Selected areas in developmental psychology. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units.

446. Advanced Topics in Social Psychology (3)
Prerequisite: Psychology 340.
Selected areas in social psychology. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units.

452. Introduction to Counseling and Therapy (3) I, II
Two lectures and two hours of activity.
Prerequisite: Psychology 350 or 351 or 386.
A survey of theory, methods and research in psychological approaches to personality and behavior change. Practice in basic interviewing and critical analysis of interviews. Not open to students with credit in Psychology 650 or Counselor Education 660.

453. Advanced Topics in Abnormal Psychology (3)
Prerequisite: Psychology 350.
Selected areas in abnormal psychology. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units.

454. Mental Deficiency (3) I, II
Prerequisite: Psychology 101. Recommended: Psychology 330.
The nature and causes of mental retardation, including the psychological effects of brain injury. Characteristics of the mentally defective.

455. Psychology of Human Sexual Behavior (3)
Prerequisite: Psychology 101.
Evaluation of behavioral and physiological data of normal, aberrant, and dysfunctional human sexual behavior, including description of available treatment methods.

456. Psychology of Death and Bereavement (3)
Latest psychological research and clinical practice in the area of death and dying, geared to assisting the student in appropriate ways of aiding both the dying and the bereaved in coming to terms with death.

457. Psychological Factors in Alcoholism (3)
Prerequisite: Six units of psychology, upper division standing.
Theoretical and empirical approaches to alcoholism: causes and treatment.
460. Physiological Psychology (3) I, II
Prerequisite: Psychology 260 or six units of biology.
An evolutionary approach to the development of complex behavior in higher organisms and
man. The neurophysiology of emotion, sleep, bodily needs, instinctive patterns of behavior, and
of learning, brain and behavior disorders.

462. Sleeping and Dreaming (3)
Sleep and sleep disorders: electrophysiological, neurophysiological, biochemical, psycho-
pharmacological, and psychological aspects.

481. Philosophical Issues in Psychology (3)
Prerequisite: Six units of psychology
Modern empiricism and the philosophy of science as related to issues in contemporary
psychology.

496. Selected Topics in Psychology (1-3) I, II
Prerequisite: Psychology 101
Intensive study in specific areas of psychology. See Class Schedule for specific content.
Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's
degree. Maximum credit six units.

497. Senior Project (1-3) I, II
Prerequisite: Twelve units of psychology and consent of instructor
An individual investigation and report on a research project. Maximum credit six units.

499. Special Study (1-3) I, II
Prerequisite: Consent of department chair
Individual study, including library or laboratory research and a written report. Maximum
credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

551. Clinical Psychology: Theory and Practice (4) I, II
Two lectures and six hours of laboratory
Prerequisite: Psychology 350
Clinical assessment, theory and practice of behavior change, and professional ethics.

570. Advanced Statistics (3) I, II
Further study of quantitative methods in psychology with emphasis on methods of correla-
tion, chi-square, and contingency, and an introduction to the analysis of variance.

571. Correlational Analysis (3)
Prerequisite: Psychology 270
Further study of quantitative methods in psychology with emphasis on methods of correla-
tion, partial correlation, and factor analysis.

580. History of Psychology (3) I, II
Limited to psychology majors with senior standing or graduate students.

587. Advanced Principles of Learning and Cognition (3) I, II
Prerequisites: Psychology 210 and 270
Empirical data, basic principles and theoretical positions of major theorists in learning and
cognitive psychology.

596. Selected Topics in Psychology (3)
Prerequisite: Psychology 101 and consent of instructor
Intensive study in specific areas of psychology. See Class Schedule for specific content.
Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's
degree. Maximum credit six units.

GRADUATE COURSES
Refer to the Graduate Bulletin.
Certificate in Public Administration (Imperial Valley Campus)

To receive the certificate a candidate must complete an approved program of 18 units with a minimum grade point average of 2.5. Up to two public administration courses taken at another institution may be included among the required courses with approval of the program adviser. Requirements include Public Administration 301, 330, 340, 341, or 450; and nine units in an area of specialization selected with the approval of the adviser.

### LOWER DIVISION COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>The Urban Scene</td>
<td>(3)</td>
<td>Key issues in urban administration, criminal justice administration, and city planning. Emphasis on government structure and public decision-making process, organizational behavior, effectiveness of criminal justice policies, zoning, and land use considerations.</td>
</tr>
<tr>
<td>220</td>
<td>Administrative Report Writing</td>
<td>(3)</td>
<td>Study and practice of various methods used to develop effective writing skills applicable to communication in the public sector. This course will not satisfy the general education requirement in English composition.</td>
</tr>
</tbody>
</table>

### UPPER DIVISION COURSES

#### Intended for Undergraduates

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>301</td>
<td>Concepts and Issues in Public Administration</td>
<td>(3)</td>
<td>Theory and practice of governmental administration in differing environments; role of administrators in public policy; issues facing administrators; techniques of administration.</td>
</tr>
<tr>
<td>305</td>
<td>Studies in Public Administration (1-3) I, II Cr/NC</td>
<td></td>
<td>Offered only in Extension. Analysis of selected administrative processes and problems of governmental agencies, their legal and political relations to other agencies and to the public. May be repeated with new content with consent of instructor. Maximum credit three units.</td>
</tr>
<tr>
<td>312</td>
<td>Management of State Governments</td>
<td>(3)</td>
<td>Administrative and constitutional problems of state management in the American federal system. Emphasis on California.</td>
</tr>
<tr>
<td>315</td>
<td>Management of the Federal Government</td>
<td>(3) II</td>
<td>Prerequisite: Public Administration 301. Problems in the administration of the federal government: for example, leadership, specialization, unity of command, oversight.</td>
</tr>
<tr>
<td>320</td>
<td>Introduction to Urban Planning</td>
<td>(3) I, II</td>
<td>An introduction to community planning: regional, county, and city. Consideration of the Master Plan, including its purposes, contents, and method of adoption.</td>
</tr>
<tr>
<td>330</td>
<td>Public Personnel Administration</td>
<td>(3) I, II</td>
<td>Analysis of personnel problems. Supervision and management of public employees and public organizations in an age of change.</td>
</tr>
<tr>
<td>340</td>
<td>Social Psychological and Behavioral Theories</td>
<td></td>
<td>Social, psychological, and behavioral theories of organization; concepts of administrative leadership, organization and the individual; emphasis on governmental organizations.</td>
</tr>
<tr>
<td>341</td>
<td>Administrative Management</td>
<td>(3) I, II</td>
<td>Areas and problems of administrative research; methods of analyzing structures and procedures in organizations; planning and administration of programs; design of forms; job classification and salary surveys; preparation of administrative reports.</td>
</tr>
<tr>
<td>350</td>
<td>Contemporary Urban Issues</td>
<td>(3)</td>
<td>Focus on urban areas and urbanism from a public policy perspective; course examines and critiques the physical, economic, social and political dimensions of contemporary American cities utilizing a multidisciplinary approach.</td>
</tr>
</tbody>
</table>
530. Negotiation and Bargaining in the Public Service (3)
Prerequisite: Public Administration 301.
Specific issues such as strategies, the effects of threat, the physical setting, use of a third-party observer and theories of advocacy. Emphasis on analyzing simulations of the bargaining process and developing effective negotiation skills.

531. Governmental Employer-Employee Relations (3)
Prerequisite: Public Administration 330.
Historical development, legal basis and organizational implications of governmental employer-employee relations; emphasis on California local government.

540. Public Administrative Systems Analysis (3)
Prerequisites: Public Administration 301 and a statistics course.
Systems and organization analysis; work standards and units, procedures analysis, administrative planning.

550. Budgetary and Financial Administration in the Public Sector (3) II
Prerequisites: Public Administration 301 and 450.
Management trends in public sector financial administration; budgetary procedures and techniques, control and monitoring systems. Cash management, capital projects management, debt administration, disbursement, funds management, and auditing.

570. Administrative Law (3)
Prerequisite: Public Administration 301.
The law of public office and public officers, powers of administrative authorities, scope and limits of administrative powers, remedies against administrative action.

580. Comparative Public Administration (3)
Prerequisite: Public Administration 301.
Administrative organization and process of selected foreign and American governments. Analysis of the cultural basis of administrative systems.

GRADUATE COURSES IN PUBLIC ADMINISTRATION AND URBAN STUDIES and CITY PLANNING
Refer to the Graduate Bulletin.

Recreation
In the College of Professional Studies and Fine Arts

Faculty
Emeritus: Butler, Hanson
Chair: Duncan
Professors: Dixon, Duncan, Geba
Associate Professors: Dustin, Hutchinson, Lamke, Peterson
Assistant Professor: Namba
Lecturers: Levin, Salz

Offered by the Department
Major in recreation administration with the A.B. degree in applied arts and sciences
Minor in recreation.

Recreation Administration Major
With the A.B. Degree in Applied Arts and Sciences

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."

The major in recreation administration may be planned with an emphasis in one of the following three areas: (1) Outdoor Recreation, (2) Recreation Systems Management, or (3) Recreation Therapy.

A minor is not required with this major.

Emphasis in Outdoor Recreation
Preparation for the major. Recreation 101, 104, 107, 205, 284; Biology 100, 100L, Geography 101; Geological Sciences 100, 101. (26 units.)

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 42-48 upper division units to include Recreation 351, 464, 485, 486, 498, 548, 549, 575; Geography 370, 575; Zoology 314; and nine units selected from Biology 420, 528; Botany 312; Geography 570; Geological Sciences 301; History 350; Psychology 340; Political Science 334; Recreation 496, 548, 549; Zoology 516, 516, 517, 518.

Emphasis in Recreation Systems Management
Preparation for the major. Recreation 101, 104, 107, 205, 284; Information Systems 290; Psychology 101; Sociology 101; six units selected from Accountancy 2104; Economics 101; Finance 140, Information Systems 180. (30 units.)

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 42 upper division units to include Recreation 351, 464, 498, 565; and nine units selected from Recreation 340, 350, 360, 460, 471, 475, 485; five units from Accounting 400, Economics 370; Marketing 370, 371, 373; Psychology 321, 340, 342, 347; Public Administration 301, 340, 350, 460; Sociology 325, 508, 514, 557.

Emphasis in Recreation Therapy
Preparation for the major. Recreation 101, 104, 107, 205, 284; English 100; Information Systems 290, Psychology 101; Sociology 101; Zoology 108. (31 units.)

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 45 upper division units to include Recreation 351, 361, 371, 452, 464, 498, 565; Biology 362; and twelve units selected from Counselor Education 400, Drama 310; Psychology 330, 335, 350, 351, 452, 454; Recreation 549, 575, 580; Sociology 513, 514, 516, 523, 526, 527, 528.
Recreation Minor

The minor in recreation consists of a minimum of 24 units to include Recreation 101, 104, 107, 205, 208, and nine upper division units selected from Recreation 340, 351, 361, 371, 452, 464, 475, 485, 486, 496, 546, 549, 555, 575, 580.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

LOWER DIVISION COURSES

101. Introduction to Recreation Systems (3) I, II
   Basic role of recreation and park systems in today’s society. Scope of recreation services, their history, philosophy, facilities, programs, personnel and evaluation.

104. Challenges of Leisure (3) I, II
   Study of leisure and its impact on contemporary life; issues affecting recreation in today’s urbanized society.

107. Recreation Planning and Leadership (3) I, II
   Two lectures and three hours of laboratory.
   Theories, principles and techniques of group leadership, group dynamics, communication, problem solving, creativity, program planning, and publicity as they relate to selected recreation systems.

110. Principles of Camp Counseling (3) I, II
   Principles of camp counseling and campcraft skills. Practical sessions aimed at preparing leaders for all aspects of organized youth camping. Required attendance at two weekend outings.

205. Wilderness and the Leisure Experience (3) I, II
   Use and abuse of natural resources for recreational purposes. Firsthand study of the effects of increased leisure on wilderness areas. Field experiences required.

208. Recreational Arts (3) I, II
   Two lectures and three hours of laboratory.
   Development of an appreciation for leadership techniques in special events and the performing arts — music, dance, drama, arts and crafts. Focuses on organization, leadership, and supervision of these activities, rather than on the mastery of performing arts skills.

284. Supervised Field Work (3) I, II Cr/NC
   Principles of camp counseling and campcraft skills. Practical sessions aimed at preparing leaders for all aspects of organized youth camping. Required attendance at two weekend outings.

285. Wilderness and the Leisure Experience (3) I, II
   Use and abuse of natural resources for recreational purposes. Firsthand study of the effects of increased leisure on wilderness areas. Field experiences required.

286. Experimental Topics (1-4)
   Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor’s degree.

UPPER DIVISION COURSES

(Compiled for Undergraduates)

300. Honors Course (1-3) I, II
   Refer to Honors Program.

340. Conduct of Recreational Sports (3) I, II
   Three lectures plus outside practical experience in the conduct of recreational sports programs.
   Organization of competition, community sports programs, administration of intramural athletics, and techniques of officiating.

351. Recreation for Special Populations (3) I, II
   Analysis of the sociopsychological aspects of special populations and their implications for leisure time pursuits. Field trips may be included.

351. Scientific Foundations of Recreation Therapy (3) I, II
   Theoretical principles of therapy and prevention. Survey of medical and psychiatric pathology and terminology.

371. Professional Foundations of Recreation Therapy (3) I, II
   Analysis of present-day policies, programs, implementation and future aspects of professional principles of recreation therapy.

452. Clinical Methodology of Recreation Therapy (3) I, II
   Two lectures and three hours of laboratory.
   Prerequisites: Recreation 351, 361, 371.
   Integration and application of clinical principles and therapeutic procedures. Emphasis on methodological and theoretical constructs of recreation therapy.

460. Industrial, Corporate and Military Recreation (3) I, II
   Prerequisite: Junior standing. Recommended: Recreation 101 and 107.
   Industrial, corporate, and military recreation services with emphasis on organizational patterns including underlying and theoretical concepts, finances, types of programs, specialized administrative skills, and current trends and issues.

464. Supervision of Recreation Agencies (3)
   Prerequisite: Recreation 101.
   Intergroup relations, personnel policies and procedures, volunteer coordination, supervisory techniques, community organization, public relations and fund raising in public, private and commercial settings.

470. Recreational Travel and Tourism Management (3)
   Analysis of commercial recreation field, including design, development, programming and marketing aspects of various commercial recreation enterprises.

484. Directed Leadership (3) I, II, S Cr/NC
   One lecture and eight hours of supervised activity.
   Prerequisite: Recreation 284.
   Supervised leadership experience in public and private recreation agencies. Maximum credit six units.

485. Outdoor Recreation Planning and Policy (3) I, II
   Nature and scope of recreation in nonurban areas. Public demand for recreation and its impact on natural resources. Management, planning, research and operation of regional and national park and recreation areas. (Formerly entitled "Non-Urban Recreation Resources").

486. Interpretative Techniques in Outdoor Recreation (3) I, II

489. Experimental Topics (1-4)
   Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor’s degree.

498. Internship in Recreation Systems (6 or 12) Cr/NC
   Twenty off-campus hours required per week for 6-unit program, or 40 off-campus hours required per week for 12-unit programs.
   Prerequisites: Consent of instructor or department chair, completion of all required lower division recreation courses, and completion of both Standard or Multimedia First Aid certificate and CPR certificate by end of semester.
   Students will be assigned to various governmental, commercial, private or medical agencies conducting recreation programs. Variety of experiences in supervision and administration. Maximum credit 12 units.

499. Special Study (1-3) I, II
   Prerequisite: Consent of special study adviser.
   Individual study. Maximum credit six units.
UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

548. Aquatic Administration (3)
Management of swimming pools, beaches, lakes and marinas; safety factors; legal requirements; health standards; facilities and programming.

549. Camp Administration (3)
Prerequisite: Recreation 110.
Operation of resident, day and travel camps. Staff management; health and safety; finances; food services; maintenance; planning and publicity.

555. Recreation Systems Administration and Research (3) I, II
Prerequisite: Recreation 101
Organizational behavior, budgeting, financing, legal and legislative aspects; contracts, grants and future trends of recreation systems. Methods of investigation, data analysis, and reporting in relation to research needs in recreation. (Formerly numbered Recreation 465.)

575. Designing Recreation Areas and Facilities (3)
Prerequisite: Recreation 101.
Design principles and concepts applied to planning and development of park and recreation areas and facilities. (Formerly titled Management of Recreation Areas and Facilities.)

580. Leisure and the Aging Process (3)
Concepts of the relationship between leisure and gerontology are examined. Influence of leisure and recreation on work and life satisfaction of older adults.

GRADUATE COURSES
Refer to the Graduate Bulletin.

Religious Studies

Religious Studies in the College of Arts and Letters

Faculty
Chair: Sparks
Professors: Anderson, Downing, Friedman, Jordan, Sparks
Associate Professor: Khalil
Assistant Professors: Hermansen, Holler
Lecturers: Johnson, Mueller

Offered by the Department
Major in religious studies with the A.B. degree in liberal arts and sciences.
Teaching major in social science (emphasis in religious studies) for the single subject teaching credential. Refer to section on Social Science.
Minor in religious studies.

Advising
All College of Arts and Letters majors are urged to consult with their department adviser as soon as possible; they are required to meet with their department adviser within the first two semesters after declaration or change of major.

Religious Studies Major

With the A.B. Degree in Liberal Arts and Sciences
All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements." A minor is not required with this major.

Preparation for the major. Religious Studies 101, 201; Philosophy 101 or 102. (9 units.)

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Refer to section of catalog on "Graduation Requirements."

Upper Division Writing Requirement. Religious Studies 396W or, with approval of the department, Anthropology 396W; English 305W; or Sociology 396W with a grade of C (2.0) or better.

Major. A minimum of 24 upper division units in religious studies to include either Religious Studies 301 or 305 and at least three units from courses included in each of the three areas listed below, and Religious Studies 498.


Religious Studies Minor

The minor in religious studies consists of a minimum of 15 units to include at least three lower division units in religious studies, and 12 units from one of the three areas listed below.


Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

LOWER DIVISION COURSES

101. World Religions (3) I, II
Major figures, attitudes and teachings of world religions.

201. Ways of Understanding Religion (3)
Examples of major approaches to study of religious phenomena, and central issues in methodology.
May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

UPPER DIVISION COURSES
(Intended for Undergraduates)

300. Honors Course (1-3) I, II
Refer to Honors Program.

301. Hebrew Scriptures (3) I, II
Prerequisite: Three units of religious studies.
Problems of composition and historical significance in the context of religious meanings of the scriptures known as the Tanakh (the Pentateuch, the Prophets and the Writings) and to Christians as the Old Testament.

305. The New Testament (3) I, II
Prerequisite: Three units of religious studies. Prerequisite recommended: Religious Studies 301.
The meeting of religion and psychology. Selected religious thinkers and selected psychologists and personality theorists from the psychoanalytic, behavioral and humanist traditions. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units of which three units may be applicable to General Education.

310. Greek and Latin Fathers (3)
Prerequisite: Three units of religious studies.
Readings in patristic thought from Ignatius of Antioch through Augustine.

312. Russian Orthodox Spirituality (3)
Prerequisite: Three units of religious studies.
Major doctrines, practices and developments in Eastern Christianity with focus on Russian Orthodoxy.

314. Medieval Western Christianity (3)
Prerequisite: Three units of religious studies.
Readings in source materials illustrative of the doctrinal and institutional development of the Western Church during the medieval period to early stages of the Reformation.

316. The Reformation and Beginnings of Modern Christianity (3)
Prerequisite: Three units of religious studies.
Readings in source materials illustrative of the doctrinal and institutional development of the Western Church during the Reformation and the Enlightenment.

318. Modern Religious Thought in the West (3)
Prerequisite: Three units of religious studies.
Selected issues in religious thought in Europe and America during the nineteenth and twentieth centuries.

330. Topics in Judaism (3)
Prerequisite: Three units of religious studies.
Selected topics such as early Hebrew religion, the Talmudic period, medieval religious thought, mysticism, modern Judaism from the emancipation to the Holocaust, contemporary thought. May be repeated with different content. See Class Schedule for specific content. Maximum credit six units.

340. Islam (3)
Prerequisite: Three units of religious studies.
Major doctrines, practices and developments from the time of Mohammed to the present.

360. Dynamics of Religious Experience (3)
Prerequisite: Three units of religious studies.
Chief data and major approaches in the study of individuals' religious behavior and experiences. Special attention to relevant problems in world religions and philosophical views of man.

353. The Human Dimension of Religion and Psychology (3) II
Prerequisite: Three units of religious studies.
The meeting of religion and psychology. Selected religious thinkers and selected psychologists and personality theorists from the psychoanalytic, behavioral and humanist traditions. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units of which three units may be applicable to General Education.

354. Religion and Society (3)
Prerequisite: Three units of religious studies.
Theoretical and religious interpretations of the social dimension of human existence. Critique of social science inquiry into traditional and contemporary forms of religious life.

360. Religion, Literature and the Arts (3)
Prerequisite: Three units of religious studies.
The relations between religion, literature and the arts in major cultural traditions.

363. Religion and the Sciences (3)
Prerequisite: Three units of religious studies.
Relation of the natural sciences to religious questions of nature, humanity and destiny.

365. Religion and Contemporary Moral Issues (3)
Prerequisite: Three units of religious studies.
Critical exploration of moral dilemmas (biomedical, social, economic, political) from Eastern and Western religious perspectives.

396W. Writing/Research Methods (1-4)
Prerequisite: Six upper division units in religious studies.
Theory and practice of research and writing in field of religious studies. Must be taken in conjunction with an upper division course in religious studies to satisfy upper division writing requirement.

401. Religions of India (3)
Prerequisite: Three units of religious studies.
Phenomenological studies in the major religious traditions of India, especially Hinduism and Buddhism. (Formerly numbered Religious Studies 501.)

403. Religions of the Far East (3)
Prerequisite: Three units of religious studies.
Phenomenological studies in the major religious traditions of East Asia, especially China and Japan. (Formerly numbered Religious Studies 503.)

480. Ways of Spiritual Transformation (3)
Doctrines and practices of metaphysical self-transformation; studies in readings selected from various world religions.

496. Experimental Topics (1-4)
Prerequisite: Three units of religious studies.
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

498 Senior Project (3)
Prerequisite: Three units of religious studies.
Seminar workshop and project in the comparative study of religious practices, doctrines, and beliefs from various world religions.

499. Special Study (1-3) I, II
Prerequisite: Twelve upper division units in religious studies.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

506. Spiritual Traditions of India (3)
Prerequisite: Three units of religious studies.
India's religious and philosophical modes of thought, reading and analysis of primary texts in Indian religious and philosophical modes of thought, reading and analysis of primary texts in translation.

508. Spiritual Traditions of East Asia (3)
Prerequisite: Three units of religious studies.
East Asian religious and philosophical modes of thought, especially those of China and Japan: reading and analysis of primary texts in translation.

518. The Oracular Tradition (3)
Prerequisite: Three units of religious studies.
Oracular traditions of East and West, with special attention to the I Ching and the Tarot.
522. Religion in America (3)
Prerequisite: Three units of religious studies.
Selected topics in religion in America, such as Deism, transcendentalism, pragmatism, church-state relations, Jewish identity, etc. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units.

580. A Major Figure (3) I, II
Prerequisite: Three units of religious studies.
Life, works and significance of one major figure in a religious tradition. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units.

581. A Metaphysical Doctrine (3) I, II
Prerequisite: Three units of religious studies.
Systematic study of a selected theme or problem basic to the teachings of one of the major religious traditions. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units.

GRADUATE COURSES
Refer to the Graduate Bulletin

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Russian
In the College of Arts and Letters

Faculty
Chair: Wulbern
Professors: Dukas, Fetzer, Kozlik

Offered by the Department of German and Russian Languages and Literatures
Master of Arts degree in Russian.
Major in Russian with the A.B. degree in liberal arts and sciences.
Teaching major in Russian for the single subject teaching credential in foreign languages.
Minor in Russian.

Advising
All College of Arts and Letters majors are urged to consult with their department adviser as soon as possible; they are required to meet with their department adviser within the first two semesters after declaration or change of major.

Russian Major
With the A.B. Degree in Liberal Arts and Sciences
All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."
Students majoring in Russian must complete a minor in another field to be approved by the departmental adviser in Russian.

Preparation for the major. Russian 101, 102, 201, 202, 211 and 212. (21 units.)

Foreign Language Requirement. The foreign language requirement for graduation is automatically fulfilled through course work for preparation for the major.

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 30 upper division units in Russian to include Russian 301, 302, 305A-305B, and 12 units in 500-level courses in Russian.

Russian Major*
For the Single Subject Teaching Credential In Foreign Languages
All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the College of Education.

This major may be used by students in teacher education as an undergraduate major for the A.B. degree in liberal arts and sciences. A minor in another field approved by the departmental adviser in Russian is required for the degree.

Preparation for the major. Russian 101, 102, 201, 202, 211, and 212. (21 units.)

Foreign Language Requirement. The foreign language requirement for graduation is automatically fulfilled through course work for preparation for the major.

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 30 upper division units in Russian to include Russian 301, 302, 305A-305B, 580, 581; six upper division units in Russian, and Humanities 330 and 331.

Proficiency Examination. Before taking a student teaching assignment in Russian, the candidate for the credential may be required to pass an oral and written proficiency examination in the language, administered by the Department of German and Russian Languages and Literatures. The candidate must consult with the chair of the Department of German and Russian Languages and Literatures concerning this examination.

*The major for the Single Subject Teaching Credential has been submitted to the Commission on Teacher Credentialing. Consult department to verify current program requirements.
Russian Minor

The minor in Russian consists of a minimum of 15 units in Russian to include Russian 202 and six units of upper division courses.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

High School Equivalents

High school foreign language courses may be used for purposes of placement in college courses and may be counted toward meeting the foreign language requirement in various majors. These high school courses will not count as college credit toward graduation.

Secondary school language courses can be used as follows:

1. The first two years of high school level language count as the equivalent of the first semester of a college level course, although students with fewer than three years of high school level language may complete the first semester college course for graduation credit.

2. The first three years of high school level language count as the equivalent of the first two college semesters, although students with fewer than four years of high school level language may complete the second semester college course for graduation credit. Students who have completed three years of foreign language in high school will not receive credit for the first semester college course unless at least five years separate the last high school course and the first college course.

3. Four years of high school level language count as the equivalent of three college semesters, thus fulfilling the foreign language requirement.

LOWER DIVISION COURSES

Native speakers of Russian will not receive credit for taking lower division courses in Russian except with advance approval from the department.

No credit will be given for Russian 101, 102, 201, 202, 301, 302 taken out of sequence.

101. First Course in Russian (4½) I, II
Four lectures and one hour of laboratory.
Prerequisites: Russian 101 or two years of high school Russian.
Continuation of Russian 101. Not open to students who have completed three years of high school Russian.

102. Second Course in Russian (4½) I, II
Four lectures and one hour of laboratory.
Prerequisite: Russian 102 or four years of high school Russian.
Continuation of Russian 102. Not open to students who have completed four years of high school Russian.

201. Third Course in Russian (4) I
Prerequisite: Russian 102 or three years of high school Russian.
Practical application of the basic principles of the language. Oral practice, reading in Russian of cultural material.

202. Fourth Course in Russian (4) II
Prerequisite: Russian 201.
Continuation of Russian 201.

211. Conversation (2) I
Prerequisite: Russian 102 or three years of high school Russian.
Practice in the spoken language with emphasis on the articulation of Russian sounds; practical vocabulary; conversation on everyday cultural topics.

212. Conversation (2) II
Prerequisite: Russian 201 or 211, or four years of high school Russian.
Continuation of Russian 211.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

301. Advanced Grammar and Composition (3)
Prerequisite: Russian 202 and 212.
Advanced grammar and stylistics; intensive writing practice; reports based on outside reading.

305A-305B. Survey of Russian Literature (3-3)
Russian literature from its beginnings, with emphasis on the nineteenth and twentieth centuries.

499. Special Study (1-3) I, II
Prerequisites: Fifteen upper division units in the major with an average of B (3.0) or better and consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

555A-555B. The Russian Short Story, Drama and Poetry of the Nineteenth Century (3-3)
Development of the Russian short story, drama and poetry of the nineteenth century.

561A-561B. The Russian Novel of the Nineteenth Century (3-3)
Development of the Russian novel of the nineteenth century.

563. Russian Literature of the Twentieth Century
Poetry, prose and drama of the twentieth century.

580. Russian Syntax and Stylistics (3)
Prerequisites: Russian 301 and 302.
The structure of contemporary Russian.

581. Russian Phonetics and Morphology (3)
Prerequisites: Russian 202 and 212.
The sounds and forms of contemporary Russian.

GRADUATE COURSES

Refer to the Graduate Bulletin.
Social Science
In the College of Arts and Letters

Faculty
Social Science is administered through the Social Science Committee, composed of faculty members from the Departments of Anthropology, Economics, Geography, History, Political Science, and Sociology. Albert O'Brien, Department of History, is coordinator.

Advising
All College of Arts and Letters majors are urged to consult with their department adviser as soon as possible; they are required to meet with their department adviser within the first two semesters after declaration or change of major.

Social Science Major
With the A.B. Degree in Liberal Arts and Sciences
All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."

Preparation for the major. Three units of statistics selected from Economics 201, Mathematics 250, Political Science 201, Psychology 270, or Sociology 201. A six-unit sequence in each of three of the following departments selected from: (1) Anthropology 101, 102, (2) Economics 100, 101, 102, (3) Geography 101, 102; (4) History 105, 106, 110A-110B, 115A-115B; (5) Mexican-American Studies 101A-110B, 115, 120A-120B; (6) Political Science 101, 102, 103, (7) Sociology 101, 110. Statistics courses taken in a social science department may not be used in fulfillment of that department's six-unit sequence. (21 units)

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Refer to section of catalog on "Graduation Requirements." Spanish is recommended for those planning to work in this part of the United States.

Upper Division Writing Requirement. Passing the University Writing Examination or Anthropology 396W or History 396W or Sociology 396W with a grade of C (2.0) or better.

Major. A minimum of 33 upper division units, selected with the consent of the adviser, to include at least 15 units in anthropology, economics, geography, history, political science, or sociology, and a combination of 15 units in art, comparative literature, and religious studies. Required courses: Anthropology 449 or 474; Geography 335, six units from History 473A, 473B, 574, 475A and 475B, and Political Science 363 or 364. In addition, the following courses are recommended: Anthropology 400, 404, 428, 429, Art 365, 568, Comparative Literature 335, Economics 365, 480, Political Science 361, 381, Religious Studies 340.

Emphasis in Environment
The adviser for this emphasis is Dr. Warren Johnson, Department of Geography, and Dr. Douglas Strong, Department of History.

Preparation for the major. Biology 100 and 100L, a six-unit sequence in each of three of the following fields: (1) anthropology, (2) economics, (3) geography, (4) history, (5) political science, and (6) sociology. (22 units.) Courses recommended for these sequences are as follows: Anthropology 101 and 102, Economics 101 and 102, Geography 101 and 102, History 105, 106, or 110A-110B or 115A-115B, Political Science 101 and 102. Sociology 101 and 110. Additional recommended courses include Biology 130 and Geological Sciences 100 and 101.

Language Requirement. Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Refer to section of catalog on "Graduation Requirements."

Upper Division Writing Requirement. Passing the University Writing Examination or Anthropology 396W or History 396W or Sociology 396W with a grade of C (2.0) or better.

Major. A minimum of 30 upper division units to include nine units selected from Economics 472 or 473, Geography 370 or 371, Political Science 334 or 335, and three additional units from this list; and 18 units from at least three departments selected from Anthropology 428, Economics 452, 453, 454, 458, 555, Geography 364, 370, 371, 401, 570, 573, 574, 575, 576, History 340, 540, Political Science 334, 335, Sociology 350, 406, 506, 557. Recommended: Biology 420, 525, 526, Geological Sciences 333, Physics 301.

Social Science Major*
For the Single Subject Teaching Credential
All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the College of Education. This major may be used by students in teacher education as an undergraduate major for the A.B. degree in liberal arts and sciences. *The major for the Single Subject Teaching Credential has been submitted to the Commission on Teacher Credentialing. Consult department to verify current program requirements.

Preparation for the major. Three units of statistics selected from Economics 201, Mathematics 250, or Political Science 201, Psychology 270, or Sociology 201. A six-unit sequence in each of three of the following departments selected from: (1) Anthropology 101, 102, (2) Economics 100, 101, 102, (3) Geography 101, 102, (4) History 100 and 101, 105 and 106, 110A-110B, 115A-115B, (5) Political Science 101, 102, 103, (6) Sociology 101, 110. Statistics courses taken in a social science department may not be used in fulfillment of that department's six-unit sequence. (21 units)

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Refer to section of catalog on "Graduation Requirements." Spanish is recommended for those planning to work in this part of the United States.
Upper Division Writing Requirement. Passing the University Writing Examination or Anthropology 396W or History 396W or History 430W or Sociology 396W with a grade of C (2.0) or better.

Major. A minimum of 33 upper division units distributed as follows:
Three units of geography selected from Geography 312A-312B, 312, 324, 331, 335, 336, 337, 339, 350, 351, 354, 356, 357, 371.
Three units from any course listed above or from Psychology 320, 321, 322, 330, 340, 342, 347, 350, 351, 452, 453, 454, 455.

Certificate in Quantitative Analysis in the Social Sciences

The Director of the Social Science Research Laboratory is coordinator for this program.

The purpose of this certificate program is to prepare students to be able to carry out social science work which is often required in public agencies and the private sector.

Students must apply for admission to Certificate program before the completion of nine units.

The certificate requires fifteen units, nine to twelve of which must be upper division to include:
Three units selected from Economics 201, Political Science 201; Sociology 201; three units selected from Mathematics 10 which it for majors.
Three units from any course listed above or from Psychology 320, 321, 322, 330, 340, 342, 347, 350, 351, 452, 453, 454, 455.

UPPER DIVISION COURSE (Intended for Undergraduates)

498. Senior Seminar (3)
Advanced reading and independent research on selected topic integrating at least two of the social science disciplines. Usually taught by two instructors representing two of the six social science disciplines of anthropology, economics, geography, history, political science and sociology.

GRADUATE COURSES
Refer to the Graduate Bulletin.

School of Social Work
In the College of Human Services

The undergraduate and graduate programs of the School of Social Work are accredited by the Commission on Accreditation of the Council on Social Work Education.

Faculty
Emeritus: Bailey, Brennen, Clary, Herman, Kahn, Maxwell, Morgan, Ontell, Reichert, Stumpf, Watson, Wite
Director: Harbert
Associate Director: Roberts (Acting)
Professors: Davis, Griffin (Undergraduate Coordinator), Harbert, Haworth, Ishikawa, Kelley, Kukkonen (Graduate Program Coordinator and Graduate Coordinator of Field Instruction), Lee, Stanford, Vale
Assistant Professors: Ellis, Gudry, Pritchard, Rehman, Sardinas, Schmidt, Simon
Lecturers: Bassoff, Gaynor, Gross, Marston, Martinez, Noel, Peer, Roberts

Offered by the School of Social Work
Major in social work with the A.B. degree in liberal arts and sciences.
Major in social work with the A.B. degree in applied arts and sciences.
Minor in social work.
Master of Social Work
Human Services Paraprofessional Certificate

Programs and Objectives

The undergraduate Social Work program prepares students to practice in social welfare agencies at both the professional and nonprofessional levels. The major leads to the B.A. degree, the minor to the B.S. degree. The graduate program prepares students for professional social work practice in social welfare agencies at both the professional and nonprofessional levels. The major leads to the M.S. degree.

The School of Social Work is accredited by the Commission on Accreditation of the Council on Social Work Education.

The primary educational objective of this major is preparation for beginning professional social work practice. In addition, the major prepares students to practice in social welfare agencies at both the professional and nonprofessional levels.

The Social Work Major
With the A.B. Degree in Liberal Arts and Sciences or in Applied Arts and Sciences

All candidates for a degree in liberal arts and sciences or in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements." A minor is not required with this major.

The primary educational objective of this major is preparation for beginning professional social work practice. In addition, the major prepares students for professional social work practice in social welfare agencies at both the professional and nonprofessional levels.

Preparation for the major. Social Work 110, 120, 130; Biology 100; Economics 100; Health Science 101; Psychology 101; Sociology 101; Psychology 270 or Sociology 201 or Mathematics 119. (27 units.)
Foreign Language Requirement for Liberal Arts and Sciences only. Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. Refer to section of catalog on "Graduation Requirements."

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 42 upper division units, in a prescribed pattern to include Social Work 350, 360, 370A-370B, 381, 483A-483B, 489A (6 units), 489B (6 units), 491, and six units of upper division electives in social work.

Recommended: Biology 362 and 462L, Psychology 330, Sociology 422, and courses from anthropology, literature, history, philosophy, political science, economics, psychology and sociology. Students should consult with their adviser in social work for selection and arrangement of courses.

Social Work Minor

The minor in social work consists of 24 units to include Social Work 110, 120; Psychology 101, Sociology 101, and Social Work 360, 370A, 381, and 496 or 499.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

Human Services Paraprofessional Certificate Program

This certificate is designed primarily for ex-offenders and ex-substance abusers who seek paraprofessional positions in human services. A certificate in paraprofessional human services may be sought by ex-offenders and ex-substance abusers who:
(a) do not meet the prerequisite requirements for a major in social work for the A.B. degree, but who are interested in pursuing a paraprofessional career in human services; (b) are not interested in or able to complete non-professional offerings which are part of the regular degree program; (c) have already earned a bachelor's degree and are not interested in a second degree.

Students are admitted to the certificate program as regular students of San Diego State University. Students must apply to the program as well as to the university. Candidacy for the certificate program will be established by the Coordinator of the Undergraduate Social Work Program.

Awarding of the certificate requires completion of an approved pattern of ten courses (30 units) with a minimum grade point average of 2.0, to include Social Work 350, 360, 370B, 381, 382, 489A, 489B, Health Science 296, Philosophy 101; and three units of an elective in another professional discipline with consent of coordinator. Course offerings under this program may only be taken in the on-campus program.

For further information, consult the Coordinator, Undergraduate Social Work Program.

LOWER DIVISION COURSES

Note: All social work courses numbered 110-596 formerly offered under rubric of social welfare.

110. Human Societies and Social Problems (3) I, II
Perspectives on problems of human societies and their relation to contemporary social problems and issues. Emphasis on distributive problems and forms of stratification.

120. Explorations in Human Services (3) I, II
Two lectures and three hours of field work.
Orientation to the field of social welfare. Readings, class discussions and participation in social work activities on campus and in the community. Work as a volunteer in the agency is required in a variety of field settings. Scheduling is flexible.

130. Marriage and Contemporary Human Relations (3) I, II
Developing understanding and ability to evaluate various concepts, attitudes and value systems as they relate to marriage and other contemporary human relationships. Assist students in acquiring abilities to develop and sustain interpersonal relationships.
489A-489B. Field Experience in Social Work (3-9, 3-9) I, II
Prerequisites: Social Work 370B; arrangement in prior semester with Undergraduate Field
Coordinator; and a 2.0 grade point average in all junior level courses required in the social work
major. Concurrent registration in Social Work 483A for 489A, concurrent registration in Social
Work 483B for 489B.
A minimum of twelve units in Social Work 489A-489B (sixteen hours per week for two
semesters or equivalent in the senior year) of practice field assignments in selected social
welfare agencies or settings. Three units by permission of Chair of Department.

491. Methods of Social Work Research (3) I, II
Prerequisite: Social Work 370B.
Definition and purpose of research in social welfare and social work. Formulation of research
problems, selecting a design and methodology, techniques of collecting, organizing, inter-
preting and analyzing data.

496. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific
content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a
bachelor’s degree.

497. Investigation and Report (3) I, II
Prerequisite: Consent of instructor.
Analysis of special topics in social welfare.

499. Special Study (1-3) I, II Cr/NC
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

540. Seminar in Social Effects of the Legal Process (3)
Prerequisite: Upper division, undergraduate social work major, or classified graduate stand-
ing in the School of Social Work; or classified graduate standing or unclassified standing with
consent of the director.
Structure and functions of law as it bears upon such groups as defendants in criminal
prosecutions, recipients of welfare programs, conservates in mental health hearings, children
in juvenile court dependency proceedings. The legal conflicts social workers may encounter
between their ethics and their duties to clients and agency.

550. Seminar in Administration and Decision Making in Human Service (3)
Prerequisite: Upper division, undergraduate social work major, or classified graduate stand-
ing in the School of Social Work; or classified graduate standing or unclassified standing with
consent of the director.
Relationship between the development of social policy and its actual implementation
through program development and delivery of human services. Administrative actions includ-
ing decision making, communication with regulatory and legislatice bodies, and budget
development are considered in the ways that policy is shaped and reflected through social
programs.

596. Experimental Topics (1-4)
Selected topics in social work. See Class Schedule for specific content. Limit of nine units of
any combination of 296, 496, 596 courses applicable to a bachelor’s degree. Maximum credit
six units.

GRADUATE COURSES
Refer to the Graduate Bulletin.
Power Relations and Inequality: Prerequisites: Sociology 101, 422, 440, Sociology 325, 333, 424, 537, 546, 547, 557. (Sociology 422 is prerequisite to 537; Sociology 440 is prerequisite to 546.)

Social Change: Prerequisites: Sociology 101, Sociology 350, 404, 506, 508, 519, 546, 547, 557. (Sociology 440 is prerequisite to 546.)

Law and Society: Prerequisites: Sociology 101, Sociology 440, 510, 513, 514, 515, 516, 518, 523.

Health and Social Behavior: Prerequisites: Sociology 101, Sociology 350, 510, 523, 526, 527, 528, 534.

Sociology of Organizations and Institutions: Prerequisites: Sociology 101, Sociology 422, 432, 440, 520, 521, 538, 539.


Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

* Unless waived by the department.

LOWER DIVISION COURSES

101. Introductory Sociology (3) I, II
This course is prerequisite to all upper division courses in sociology. Basic theoretical perspectives, concepts, and methods of sociology applied to analysis of social issues and processes. Selected topics include, e.g., social stratification, social organization, minority-majority relationships, social change, deviant behavior.

110. Contemporary Social Problems (3) I, II

201. Elementary Social Statistics (3) I, II
Prerequisites: Sociology 101 and qualification on the Mathematics Placement Examination. Analysis and presentation of elementary materials in the fields of sociology and social work. Tabular and graphic presentation; analysis of frequency distribution; trends, simple correlation, sampling and reliability techniques. Students with credit or concurrent registration in another statistics course will be awarded a total of four units for the two (or more) courses.

296. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor’s degree.

UPPER DIVISION COURSES

(Extended for Undergraduates)

300. Honors Course (1-3)
Refer to Honors Program.

325. Minority Group Relations (3) I, II
Prerequisite: Sociology 101.
Theories of ethnic prejudice. Analysis of racial and ethnic discrimination. An analytical inquiry into sources of friction and causes of conflict between majority and minority groups. (Formerly numbered Sociology 525.)

333. Sex Roles in Contemporary Societies (3) I, II
Prerequisite: Sociology 101.
Male-female relationships in occupational, educational and familial settings viewed historically and cross-culturally. Changing concepts of femininity and masculinity. Images of men and women in literature, in the mass media, and in laws and judicial decisions. (Formerly numbered Sociology 533.)

334. Love, Jealousy, and Envy (3)
Prerequisite: Sociology 101.
Sociological understanding of human emotions developed through consideration of history of sex and love, social psychology of jealousy, and political implications of envy. Psychological approaches to understanding and management of emotions analyzed from a sociological point of view. Some implications for self-understanding are developed.

350. Population and Contemporary Issues (3) I, II
Prerequisite: Sociology 101.
Analysis of population processes as they affect and are affected by such contemporary issues as rapid world population growth, famine, ecological pressures, abortion, women's liberation, racial and ethnic relations, and illegal migration. (Formerly numbered Sociology 550.)

398W. Writing in Sociology (3)
Prerequisite recommended: Sociology 101.
Instruction and practice in methods of writing in the social sciences. Principles of scientific discourse, research and report writing and proposal writing. Satisfies University upper division writing requirement for students who have completed 60 units, fulfilled the Writing Competency requirement, and completed the General Education requirement in Written Communication.

400. History of Social Thought (3) I
Prerequisite: Sociology 101.
Development of social thought prior to the appearance of sociology as a distinct scientific discipline. Major emphasis on European contributions.

401. Classical Sociological Theory (3) I, II
Prerequisite: Sociology 101.
Theories of the major early European and American sociologists, including Marx, Weber, Durkheim, Pareto, Cooley, Mead and others.

403. Contemporary Sociological Theory (3)
Prerequisite: Sociology 101.
Types and trends of contemporary sociological theory. Selected theoretical works.

404. Social Change (3) I, II
Prerequisite: Sociology 101.
Social change at the interpersonal, institutional and societal levels in a comparative perspective. Detailed analysis of modernization.

405. Sociological Laboratory II (1)
Three hours of laboratory. Prerequisite: Must be taken in conjunction with a three-unit upper division course. The application of experimental, quantitative or qualitative methods to sociological problems. Development of experimental social simulation teaching techniques.

406. Science, Technology and Social Dynamics (3)
Science and technology in social change. Case studies from preindustrial and early industrial societies. Effect of science and technology on contemporary social organization in developing and developed nations and implications for future.

422. Social Organization (3) I, II
Prerequisite: Sociology 101.
Major forms of social organization such as institutions, associations, bureaucracy, primary groups and stratification. Study of underlying processes of development, social control and organizational change.

424. Wealth, Status and Power (3) I, II
Prerequisite: Sociology 101.
Distribution of wealth, power, privilege and prestige in society. Causes, outcomes and dynamics of inequality; process of upward and downward social mobility; and relationship of social class to politics, the economy, and other institutions. (Formerly entitled "Sociology of Stratification").

432. Formal Organization (3)
Prerequisite: Sociology 101.
The structure and dynamics of various types of complex formal organization. Their development, internal structure and processes, external relations and function in contemporary society.
440. Social Psychology: Sociological Approaches (3) I, II
Prerequisite: Sociology 101
Survey of the major theoretical frameworks, problems and findings of sociology and social-psychology concerning group behavior and group membership, the socialization of the individual, and processes of social interaction.

460. Quantitative Methods in Social Research (3) II
Prerequisite: Sociology 201
The use of parametric and nonparametric techniques in the analysis of social research data, including analysis of variance, covariance, multiple and partial correlational techniques.

464. Survey and Experimental Research Methods (3) I, II
Prerequisite: Sociology 201
Examination of the research process from research design through data processing, analysis and interpretation. Emphasis on quantitative research techniques including sample surveys, questionnaire construction, scaling techniques and experimental designs.

465. Qualitative Research Methods (3)
Prerequisite: Sociology 201
Examination of field research methods including interviewing, observation, participant observation and case studies. Problems in research design, gaining and maintaining rapport, and analysis and interpretation of data.

480. Field Internship (3-6) I, II
Prerequisite: Sociology 201
Supervised field placement of students in community agencies. Practical experiences related to studies within the sociology curriculum. Maximum credit six units.

496. Experimental Topics (1-4) I, II
Prerequisite: Consent of the instructor
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a major or related to studies within the sociology curriculum. Maximum credit six units.

499. Special Study (1-3) I, II
Prerequisite: Consent of instructor
Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

506. Modernization of Traditional Societies (3)
Prerequisite: Sociology 101
Examines theories of social change relative to industrialization and urbanization of pre-industrial societies. Comparative study of institutional and social-psychological consequences of industrialization, utilizing historical and contemporary study of macrosocial change.

508. Sociology of the Future (3)
Prerequisite: Sociology 101
Examines sociological aspects of alternative futures and the role of contemporary behavior in creating those futures. Analysis of projections in selected areas such as family, technology, work and leisure.

510. Sociology of Deviance (3) I, II
Prerequisite: Sociology 101
Survey of many alleged abnormal phenomena in society as seen in society today in various forms of individual, family, community and world disorganization, such as crime, prostitution, extreme alcoholism, migratory workers, divorce, revolution, war, etc.

513. Criminology (3) I, II
Prerequisite: Sociology 101
The extent and characteristics of crime, consideration of physical, mental, economic and sociological causes of crime.

514. Juvenile Delinquency (3) I, II
Prerequisite: Sociology 101
The nature and extent of delinquency; the causative factors involved; methods of control and prevention, with special attention to the protective and remedial measures offered by the school, home, juvenile court, correctional institutions and camps, probation and parole, and recreational agencies.

515. Societal Processing of Criminals and Delinquents (3)
Prerequisite: Sociology 101
Sociological features of social processing of criminals and delinquents in terms of sociological theory concepts and research.

516. Sociology of Punishments and Corrections (3)
Prerequisite: Sociology 101
Historical, theoretical and empirical analyses of punishment and rehabilitation, analysis of contemporary correctional settings, and examination of prison populations and alternatives to prison.

518. Women and Crime (3)
Prerequisite: Sociology 101
Female criminality in our society and the feminist movements. Examination of social science literature on women and crime and the experience of women with the criminal justice system, the experience of women in prison, crimes against women, and how sexuality has been treated as crime.

519. Topics in Comparative Societies (3)
Prerequisite: Sociology 101
Analysis of contemporary social structure, the process of modernization and current social problems in selected areas of the world. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units.

520. Industrial Sociology (3) I, II
Prerequisite: Sociology 101
The role of industrial bureaucracies as they relate to social environment. Consequences of various models of organization for managerial, worker, and marginal work roles. Functions of labor unions, and industrial structure and conflict.

521. Sociology of Occupations and Professions (3) I, II
Prerequisite: Sociology 101
Division of labor, status ranking of occupations, authority structures, occupational and professional organization, occupational socialization, problems of identity and role conflict.

523. The Sociology of Mental Illness (3) I, II
Prerequisite: Sociology 101
The social definition, ecology and control of mental illness across various societies. The implications of social differentiation, stratification and urbanization upon the incidence, prevalence and control of mental illness and the use of these empirical problems for sociological research.

526. Sociology of Health and Illness (3) I, II
Prerequisite: Sociology 101
The social definition, ecology and control of mental illness across various societies. The implications of social differentiation, stratification and urbanization upon the incidence, prevalence and control of mental illness and the use of these empirical problems for sociological research.

527. Sociology of Aging (3) I, II
Prerequisite: Sociology 101
Status and roles of men and women in the second half of the life cycle. Ethnic, sex and class variables in aging. Cross-cultural comparisons of occupational, educational, familial, recreational and political opportunities for the aging.

528. Sociology of Death (3) I, II
Prerequisite: Sociology 101
Examines sociological concepts and theories of the process of dying. Comparative study of death and dying with emphasis on social, psychological and social organization approaches. Consideration of contemporary social-ethical issues surrounding dying in our society.
534. Sexuality in Modern Society (3) I, II
Prerequisite: Sociology 101
Analysis of landmark sex research and pornography in the United States and in selected
other societies. Changing norms in premarital, marital, and extramarital attitudes and behaviors.
Implications for the individual, family, and society.

535. The American Family and Its Alternatives (3) I, II
Prerequisite: Sociology 101
Analysis of contemporary dating, engagement, marriage, family, and other intimate relationships
in the United States as they are affected by changes in the culture.

536. The Family in Cross-Cultural Perspective (3)
Prerequisite Sociology 101. Recommended: Sociology 535.
Comparative study of selected family systems in the past and present. Family and non-family forms in intentional communities of the 19th century compared with contemporary communal experiments. Ethnic and class differences in family organization. (Not open to students with credit in Family Studies and Consumer Sciences 536.)

537. Political Sociology (3)
Prerequisite: Sociology 422
Social organization of political processes. Power and authority, social class, primary groups, collective behavior, social change and other sociological factors considered in their relationships to political processes.

538. Sociology of Religion (3)
Prerequisite: Sociology 101. Recommended: Sociology 401 and 546.
The role of religion in society as cult and institution, including primitive religion, modern sects and churches, ritual, secularization and religious movements.

539. Sociology of Education (3) I, II
Prerequisite: Sociology 101
Social organization of education, teaching as a profession. Class, ethnic and other social factors affecting the educational process. Educational institutions and the community.

540. Sociology of Mass Communication (3) II
Prerequisite: Sociology 101. Recommended: Sociology 440 and 546
Sociological analysis of the processes and effects of mass communications in different social systems, their functions and dysfunctions and their relationships to other social institutions.

544. Collective Behavior (3)
Prerequisite: Sociology 440
The basic processes of social behavior in masses and groups, including crowd behavior, fads, fashions, crazes, panics, rumors, sects and cults, heroes and scapegoats, social movements; effects of mass communication.

545. Protests, Reforms and Revolutions (3) I, II
Prerequisite: Sociology 101. Recommended: Sociology 422 and 545
Revolutionary and reform movements in relationship to the larger society. Conditions leading to development of social movements, emergence of leadership, ideologies, strategies, recruitment of members and social consequences, case studies in depth.

557. Urban Sociology (3) I, II
Prerequisite: Sociology 101
The structure and function of the modern city; types of neighborhoods; forms of recreation; social forces in a metropolitan area; types of urban personalities and groups; rural-urban conflicts of culture. Practical field studies required.

558. Urbanization and Modernization in Latin America (3)
Prerequisite: Sociology 101
Impact of urbanization and modernization on status, class, and power relations in Latin America. Changes in beliefs, attitudes and values as affected by the processes of urbanization and modernization.

560. Applied Sociological Research (3) I, II
Prerequisite: Sociology 464 or 465
Practical research skills learned while participating in original and applied sociological research projects. Group, rather than individual, research projects.
Spanish
In the College of Arts and Letters

Faculty
Emeritus: Baker, Sender
Chair: Barrera
Professors: Barrera, Case, Christensen, Head, Jiménez-Vera, Lemus, Segade, Silverman, Walsh
Associate Professors: Higgs, O'Brien, Santaló, Talamantes, Weeter, Young

Offered by the Department of Spanish and Portuguese Languages and Literatures
Master of Arts degree in Spanish.
Major in Spanish with the A.B. degree in liberal arts and sciences.
Teaching major in Spanish for the single subject teaching credential in foreign languages.
Minor in Spanish.
Certificate in Translation and Certificate in Court Interpreting.

Advising
All College of Arts and Letters majors are urged to consult with their department adviser as soon as possible; they are required to meet with their department adviser within the first two semesters after declaration or change of major.

Spanish Major

With the A.B. Degree in Liberal Arts and Sciences
All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements." Students majoring in Spanish must complete a minor in another field approved by the departmental adviser in Spanish.

Preparation for the major. Spanish 101, 102, 201, 202, 211, and 212 or equivalents. See adviser. (21-15 units.)

Foreign Language Requirement. The foreign language requirement for graduation is automatically fulfilled through course work for preparation for the major.

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses, with a grade of C, 2.0 or better. See adviser.

Advising
All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the College of Education.

Preparation for the major. Spanish 101, 102, 201, 202, 211 and 212. (21 units.)

Foreign Language Requirement. The foreign language requirement for graduation is automatically fulfilled through course work for preparation for the major.

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses, with a grade of C, 2.0 or better. See adviser.

Spanish Minor

For the Single Subject Teaching Credential in Foreign Languages
All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the College of Education.

Preparation for the major. Spanish 101, 102, 201, 202, 211 and 212. (21 units.)

Foreign Language Requirement. The foreign language requirement for graduation is automatically fulfilled through course work for preparation for the major.

Spanish Major*

For the Single Subject Teaching Credential in Foreign Languages
All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog for single subject teaching credentials.

Preparation for the major. Spanish 101, 102, 201, 202, 211 and 212. (21 units.)

Foreign Language Requirement. The foreign language requirement for graduation is automatically fulfilled through course work for preparation for the major.

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses, with a grade of C, 2.0 or better.

Spanish Minor

The minor in Spanish consists of a minimum of 15 units in Spanish, six units of which must be in upper division courses.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

Certificate in Translation and Court Interpreting

The Department of Spanish and Portuguese Languages and Literatures offers a Certificate in Translation and a Certificate in Court Interpreting. Both certificates require 15 units in Spanish dealing with problems of translation and court interpreting and include both translation and interpreting from Spanish to English and from English to Spanish.

Prospective candidates for the certificates should possess a bilingual facility in Spanish and English.

All students must complete with a grade of B or better English 305W (or pass the University Upper Division Writing Competency Examination), and Spanish 301, 302 and 450 prior to starting work on either certificate.

After meeting the basic requirements for admission, a student must complete 15 units with a GPA of 3.0 or better chosen from the following courses: Spanish 304, 493, 494, 495, 556, 557, and 499 or 596 when offered with appropriate certificate-related content. Students working for the Certificate in Court Interpreting must take six units in Spanish 494 as part of the 15-unit program.

Upon completing 15 units of course work, students must take a departmental examination either for the Certificate in Translation or for the Certificate in Court Interpreting. Upon successful completion of an examination, the student shall be awarded the appropriate certificate.

High School Equivalents

High school foreign language courses may be used for purposes of placement in college courses and may be counted toward meeting the foreign language requirement in various majors. These high school courses will not count as college credit toward graduation.

Secondary school language courses can be used as follows:
1. The first two years of high school level language course as the equivalent of the first semester of a college level course, although students with fewer than three years of high school level language course may complete the first semester college course for graduation credit.
2. The third and fourth years of high school level language courses as the equivalent of the first two college semesters, although students with fewer than four years of high school level language may complete the second semester college course for graduation credit.

Students entering San Diego State University with five or six years of high school Spanish may enroll in Spanish 202; the department recommends, however, that they take Spanish 301.

LOWER DIVISION COURSES

Native speakers of Spanish from foreign countries will not receive credit for taking lower division courses in Spanish, except with advance approval from the department.

No credit will be given for Spanish 101, 102, 201, 202, 301 taken out of sequence.

101. Elementary (4½) I, II
Four lectures and one hour of laboratory
Pronunciation, oral practice, readings on Hispanic culture and civilization, essentials of grammar. Not open to students who have completed three years of high school Spanish.

Spanish Minor

The minor in Spanish consists of a minimum of 15 units in Spanish, six units of which must be in upper division courses.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

Certificate in Translation and Court Interpreting

The Department of Spanish and Portuguese Languages and Literatures offers a Certificate in Translation and a Certificate in Court Interpreting. Both certificates require 15 units in Spanish dealing with problems of translation and court interpreting and include both translation and interpreting from Spanish to English and from English to Spanish.

Prospective candidates for the certificates should possess a bilingual facility in Spanish and English.

All students must complete with a grade of B or better English 305W (or pass the University Upper Division Writing Competency Examination), and Spanish 301, 302 and 450 prior to starting work on either certificate.

After meeting the basic requirements for admission, a student must complete 15 units with a GPA of 3.0 or better chosen from the following courses: Spanish 304, 493, 494, 495, 556, 557, and 499 or 596 when offered with appropriate certificate-related content. Students working for the Certificate in Court Interpreting must take six units in Spanish 494 as part of the 15-unit program.

Upon completing 15 units of course work, students must take a departmental examination either for the Certificate in Translation or for the Certificate in Court Interpreting. Upon successful completion of an examination, the student shall be awarded the appropriate certificate.

High School Equivalents

High school foreign language courses may be used for purposes of placement in college courses and may be counted toward meeting the foreign language requirement in various majors. These high school courses will not count as college credit toward graduation.

Secondary school language courses can be used as follows:
1. The first two years of high school level language course as the equivalent of the first semester of a college level course, although students with fewer than three years of high school level language course may complete the first semester college course for graduation credit.
2. The third and fourth years of high school level language courses as the equivalent of the first two college semesters, although students with fewer than four years of high school level language may complete the second semester college course for graduation credit.

Students entering San Diego State University with five or six years of high school Spanish may enroll in Spanish 202; the department recommends, however, that they take Spanish 301.

LOWER DIVISION COURSES

Native speakers of Spanish from foreign countries will not receive credit for taking lower division courses in Spanish, except with advance approval from the department.

No credit will be given for Spanish 101, 102, 201, 202, 301 taken out of sequence.

101. Elementary (4½) I, II
Four lectures and one hour of laboratory
Pronunciation, oral practice, readings on Hispanic culture and civilization, essentials of grammar. Not open to students who have completed three years of high school Spanish.
102. Elementary (4%) I, II
Four lectures and one hour of laboratory
Prerequisite: Spanish 101 or two years of high school Spanish.
Continuation of Spanish 101. Not open to students who have completed four years of high school Spanish.

201. Elementary (4%) I, II, S
Four lectures and one hour of laboratory
Prerequisite: Spanish 102 or three years of high school Spanish.
Continuation of Spanish 102, with additional outside readings and oral and written reports.

202. Intermediate (4) I, II, S
Prerequisite: Spanish 201 or four years of high school Spanish.
Review of essentials of Spanish grammar. Readings in Spanish of cultural materials, short stories, novels or plays; oral practice; outside readings with oral and written reports.

211. Intermediate Conversation and Writing (2)
Prerequisite: Spanish 102 or three years of high school Spanish.
Emphasis on the spoken language with a modicum of writing practice; practical vocabulary and useful phrases; conversation on assigned social, cultural or literary topics at an intermediate level; all class discussion conducted in Spanish. Not open to students with credit for Spanish 211-Y.

211-Y. Intermediate Conversation and Writing in Mexico (3)
Prerequisite: Spanish 102 or three years of high school Spanish.
Emphasis on the spoken language with a modicum of writing practice; practical vocabulary and useful phrases; conversation on assigned social, cultural or literary topics at an intermediate level; all class discussion conducted in Spanish; course arranged in tour fashion in Mexico during winter interim or summer period. Not open to students with credit for Spanish 211.

212. Intermediate Conversation and Writing (2) I, II, S
Prerequisite: Spanish 201 and 211 or four years of high school Spanish.
Continuation of Spanish 211. May be taken concurrently with Spanish 202.

296. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

UPPER DIVISION COURSES
( Intended for Undergraduates)

301. Advanced Oral and Written Composition (3) I, II, S
Prerequisite: Spanish 202 or five years of high school Spanish.
Advanced Spanish composition. All class discussions conducted in Spanish. Not open to students with credit for Spanish 301-Y.

301-Y. Advanced Conversation and Writing in Mexico (3)
Prerequisite: Spanish 211 or 211-Y and 212 or five years of high school Spanish or near native-level proficiency.
Emphasis on the spoken language with supporting practice in the written language; conversation on assigned social, cultural or literary topics at an advanced level; all class discussion conducted in Spanish; course arranged in tour fashion in Mexico during winter interim or summer period. Not open to students with credit for Spanish 301.

302. Advanced Oral and Written Composition (3) I, II, S
Prerequisite: Spanish 301.
Continuation of Spanish 301, with additional outside reading and oral and written reports. All class discussions conducted in Spanish.

303. Advanced Composition and Style (3)
Prerequisites: Spanish 301 and 302.
Expository writing course, based on study of outstanding works of imaginative literature, and the arts; emphasis on mastery of style and organization.

304. Introduction to Spanish-English/English-Spanish Translation (3) I, II
Prerequisite: Spanish 450.
Problem areas in Spanish-English and English-Spanish translation. Theoretical problems of translation; linguistic obstacles; lexical problems of translation; interpersonal communication; morphology and syntax.

305A-305B. Survey Course in Spanish Literature (3-3)
Prerequisite: Spanish 202.
Important movements, authors and works in Spanish literature from the Middle Ages to the present.

306A-306B. Survey of Spanish-American Literature (3-3)
Prerequisites: Spanish 202 and 212.
Reading from representative Spanish-American authors during colonial, revolutionary and modern periods.

440. Spanish Civilization (3)
Prerequisites: Spanish 202 and 212.
Spanish culture of the past and present. With emphasis on literature, philosophy and the arts. Not open to students with credit in Humanities 350.

441. Spanish-American Civilization (3)
Prerequisites: Spanish 202 and 212 (except at the Imperial Valley Campus.)
Spanish-American cultures, with emphasis on literature, philosophy and the arts.

442. Mexican Civilization (3)
Prerequisites: Spanish 202 and 212.
The major currents and characteristics of Mexican culture, as expressed through the centuries in literature, philosophy and the arts.

448. Spanish Linguistics (3) I, II, S
Prerequisites: Spanish 301 and 302.
Structural, historical and applied Spanish linguistics. (Formerly numbered Spanish 548.)

449. Phonetics and Phonemics (3) I, II, S
Prerequisites: Spanish 301 and 302.
Sounds of Spanish, and Spanish phonemic systems. Problems involved in teaching of Spanish pronunciation to English-speaking students. (Formerly numbered Spanish 549.)

450. Advanced Grammar (3) I, II, S
Prerequisites: Spanish 301 and 302.
Significant systematic features of modern Spanish grammar with analysis of passages from literature. Required for credential applicants. (Formerly numbered Spanish 490.)

460. Golden Age Literature (3) I, II, S
Prerequisite: Spanish 305A-305B.
Major works and works, concentrating on prose and lyric poetry. (Formerly numbered Spanish 556.)

471. Spanish-American Poetry (3) I, II, S
Prerequisites: Spanish 306A-306B.
Spanish-American poetry of the nineteenth and twentieth centuries. (Formerly numbered Spanish 570.)

471. Spanish-American Short Story (3) I, II, S
Prerequisites: Spanish 306A-306B.
Principal Spanish-American short story writers. (Formerly numbered Spanish 571.)

472. Dramatic Expression in Modern Spanish-American Theatre (3) I, II, S
Prerequisites: Spanish 306A-306B.
Principal Spanish-American dramatists and movements. Use of dialogue as a dramatic expression in Modern Spanish-American theatre with examples from novels. (Formerly numbered Spanish 572.)

493. Advanced Spanish-English/English-Spanish Translation (3) I, II
Prerequisites: Spanish 304, 450.
Practice involving methods and techniques in translation of legal or government papers, banking documents, and business contracts from Spanish into English and from English into Spanish. Practice in translation of old Spanish into English (deeds, surveys, baptismal records, manuscripts of books). (Formerly numbered Spanish 545.)
494. Court Interpreting in Spanish-English and English-Spanish (3) I, II
Prerequisites: Spanish 304, 450.
Practicum in judicial interpreting. Problem areas include: simultaneous interpreting, consecutive interpreting, summary interpreting, sight translation; mock trials and specialized vocabulary. Visits to local courts. May be repeated with consent of instructor. Maximum credit six units. (Formerly numbered Spanish 544.)

495. Intensive Spanish for Public School Personnel (6) S
Prerequisites: Limited to persons working in the field of education (inservice students). Beginning through Advanced Spanish according to learner's entrance proficiency level, with accompanying study of Hispanic and Chicano cultures and teaching methods for bilingual education.

496. Selected Studies in Spanish (3)
Topics in Spanish or Spanish-American language, literature, culture and linguistics. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units.

499. Special Study (1-3) I, II
Prerequisite: Consent of instructor. Individual study Maximum credit six units. This course is intended only for students who are currently enrolled in or who already have credit for all upper division courses in Spanish available in any given semester.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

510A-510B. Modern Spanish Drama (3-3)
Prerequisites: Spanish 305A-305B.
Semester I: Development of Spanish theater from 1800 to Spanish Civil War. Major literary movements and themes analyzed through study of works of representative dramatists of the period. Semester II: Spanish theater from the Civil War to the present. Theater of the absurd, theater of social justice, underground theater, and new directions in today's Spanish drama.

515A-515B. Mexican Literature (3-3)
Prerequisites: Spanish 306A-306B.
Aspects of Mexican culture. Semester I: A rapid survey of Mexican literature from the colonial period to the twentieth century. Semester II: The twentieth century, with emphasis on the contemporary Mexican novel and theater.

520. Caribbean Area Countries Literature (3)
Prerequisites: Spanish 306A-306B.
Literature of Caribbean Islands, Central America, Colombia and Venezuela, from colonial period to present. Special emphasis on contemporary era.

522. Andean Countries Literature (3)
Prerequisites: Spanish 306A-306B.
Literature of Ecuador, Peru, Bolivia and Chile from the period immediately preceding the Spanish conquest to the present.

524. River Plate Literature (3)
Prerequisites: Spanish 306A-306B.
Literature of Argentina, Paraguay and Uruguay from colonial period to present.

530. Nineteenth Century Spanish Novel and Short Story (3)
Prerequisites: Spanish 305A-305B.
The development of the novel and short story in Spain in the nineteenth century.

532. Twentieth Century Spanish Novel and Short Story (3)
Prerequisites: Spanish 305A-305B.
The development of the novel and short story in Spain to 1936, with emphasis on the novel of the generation of 1898.

533. Contemporary Spanish Novel (3)
Prerequisites: Spanish 306A-305B.
The development of the novel and short story in Spain since 1936.

556. Translation of Literary Works: A Critical Comparison (3)
Prerequisite: Spanish 493.
Techniques and methods of translating literary texts from English to Spanish and Spanish to English: textual and stylistic problems in different periods, genres, and dialects, with emphasis on contemporary literature.

557. Spanish/Spanish-American Dialectology (3)
Prerequisites: Spanish 450; one English composition course and one linguistics course. Phonological, morphological, syntactic and lexical characteristics of the principal dialects of Spanish.

561. Methods in Teaching Spanish as a Second Language (3)
Prerequisite: Spanish 448 or 450.
Teaching of Spanish as a second language: contemporary theory and methods. Not open to students with credit or concurrent enrollment in French 561.

596. Selected Studies in Spanish (3)
Prerequisites: Spanish 301 and 302.
Topics in Spanish or Spanish-American language, literature, culture and linguistics. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units.

GRADUATE COURSES
Refer to the Graduate Bulletin.
Speech Communication

In the College of Professional Studies and Fine Arts

Faculty

Emeritus: Ackley, Adams, Sanders
Chair: King
Professors: Benjamin, King, Mills, Samovar, Weitzel
Associate Professors: Andersen, J., Hellweg, Lustig
Assistant Professor: Gaske

Offered by the Department

Faculty electives (except Speech Communication 103), (15 units.)

Forensics Program as co-curricular laboratories. These activities are an extension of English/Speech Minor in speech communication.

The Speech Communication Department conducts a number of activities such as the Forensics Program as co-curricular laboratories. These activities are an extension of classroom instruction, and credit may be allowed upon approval by the instructor in charge.

Speech Communication Major

With the A.B. Degree in Applied Arts and Sciences

All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."

A minor is not required with this major.

Preparation for the major. Speech Communication 105, 111A, 135, 160, and three units of electives (except Speech Communication 103). (15 units.)

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 27 upper division units to include Speech Communication 350, 535 and 592; three units selected from Speech Communication 362, 391, 392, 407, and 508; and 15 units selected from 300- through 500-numbered Speech Communication courses excluding 396W. No more than nine units from the following Speech Communication courses: 300, 301, 309, 361, 400, 496, 499.

Speech Communication Major*
The Single Subject Teaching Credential in English/Speech

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the College of Education. This major may be used by the students in teacher education as an undergraduate major for the A.B. degree in applied arts and sciences.

Preparation for the major. Speech Communication 105, 111A, 135, 160, 191, 204. (18 units.)

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 24 upper division units in speech communication to include Speech Communication 362, 391, 392, 508, 520, three units of 396, and six units selected from any combination of Speech Communication 301, 361 and 400.

Credential requirements. Eighteen units to include:

1. Language: Three to six units from Linguistics 101, 520, 524 or 550.
2. Literature: Six to nine units from English 250A-250B, 260A-260B, or other literature courses approved by the Speech Communication Department Chair.
3. Composition: Six to nine units from English 200 and 500W; Journalism 220 or 310.

*The major for the Single Subject Teaching Credential has been submitted to the Commission on Teacher Credentialing. Consult department to verify current program requirements.

Speech Communication Minor

The minor in speech communication consists of a minimum of 24 units to include 12 units selected from Speech Communication 111A, 135, 160, 191, 204; and 12 units of electives most appropriate to the student’s major selected in consultation with the Speech Communication undergraduate adviser from one of the following areas:


Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

LOWER DIVISION COURSES

103. Oral Communication (3) I, II
Training in fundamental processes of oral expression; method of obtaining and organizing material; outlining; principles of attention and delivery; practice in construction and delivery of various forms of speeches. Speech Communication 103 recommended in general education.

Not open to students with credit in Afro-American Studies 140. Mexican-American Studies 111A

105. Introduction to Speech Communication (3) I, II, S
The status of the discipline, interrelationships among varied specialties within the field, and career opportunities. Intended for students who are either considering or who are committed to a speech communication major or minor. This class should be completed as early as possible.

111A. Fundamentals of Interpretation (3) I, II
Literature and principles of its oral presentation by the interpreter.

111B. Intermediate Interpretation (3)
Prerequisite recommended: Speech Communication 111A.
Theory and practice of oral interpretation with emphasis on vocal performance, physical performance, and other aspects of delivery. Practice through recording and live presentation of readings, group speaking, and readers theater. Outside activity required.

135. Principles of Communication (3) I, II
Identification, description, and study of fundamental communication principles such as language, nonverbal codes, perception and empathy. Emphasis on the interpersonal communication context.

160. Argumentation (3) I, II
Argument as a form of discourse, organizing, supporting, presenting and refuting arguments in a variety of formats; evaluating argument, including common fallacies in reasoning.

161. Intercollegiate Forensics (1) I, II, Cr/NC
Two field trips required.
Three hours of activity and two coaching hours to be assigned. Credit for participation in intercollegiate program. Maximum credit four units for Speech Communication 161 and 361.

191. Group Discussion (3) I, II

204. Advanced Public Speaking (3) I, II
Prerequisite recommended: Speech Communication 103.
Practice in extemporaneous speaking on subjects of current interest, both national and local, with stress on organization and delivery. Not open to students with credit in Mexican-American Studies 111A. (Formerly numbered Speech Communication 104.)

296. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor’s degree.
UPPER DIVISION COURSES
(Intended for Undergraduates)

300. Honors Course (1-3) I, II Cr/NC
Prerequisite: Speech Communication 105.
Rationale for research and research techniques in speech communication. Practice in
writing research reports. Satisfies University upper division Writing Competency
requirement for students who have completed 60 units, fulfilled the Writing Competency requirement, and completed the General Education requirement in Written Communication.

301. Management of Speech Activities (1) I, II Cr/NC
Two hours of activity. Planning, preparation, management and supervision of speech tournaments and other intercollegiate activities under the supervision of the speech communication staff. Maximum credit two units.

309. Workshop in Speech (1-3) Cr/NC
Prerequisite: Speech Communication 105.
Study of some problems in speech communication. Maximum credit six units.

315. Nonverbal Communication (3)
Prerequisites recommended: Speech Communication 204 or 391 and 135.
Theories and practices of nonverbal aspects of speech communication, with emphasis on
proxemics, kinesics, and paralinguistics.

345. Interpersonal Communication Theory and Application (3) I, II
Prerequisite: Speech Communication 135.
Theory and application of effective interpersonal communication principles in both intimate
and nonintimate contexts. Addresses theoretical and empirical evidence on communication
strategies and behaviors in relationship initiation, development, and termination. Relationship of
communication behaviors to relational goals.

350. Classical Rhetorical Theory to 1700 (3)
Theoretical theories from their origins to the Renaissance. Emphasis on the theories of Plato,
Aristotle, Cicero and Quintilian, and the application of principles to rhetorical
discourse.

354. Contemporary Rhetorical Theory and Criticism (3) I, II
Emphasis on rhetorical criticism and contemporary developments since the Renaissance.
The theories of Blair, Campbell, Whately, Richards, Weaver, Burke and others investigated as
systems of rhetorical criticism and sources of principles of rhetorical discourse.

361. Intercollegiate Forensics (1) I, II Cr/NC
Two field trips required.
Three hours of activity and two coaching hours to be assigned. Credit for participation in
intercollegiate program. Maximum credit four units for Speech Communication 161 and 361.

362. Advanced Argumentation (3) I
Prerequisite recommended: Speech Communication 160.
The approaches to argument and the patterns and problems in argument. Consideration of
implications for society. Written and oral reports.

380. American Public Address (3) I, II
Public discourse from the colonial period to the present.

391. Group Communication (3) I, II
The theoretical processes of small group communication. Emphasis on the theory of group
formation, interaction, procedures and leadership.

392. Business and Professional Speech (3)
Prerequisite recommended: Speech Communication 204.
Communication principles in a variety of business and professional contexts, including
interviewing, technical and nontechnical oral presentations. Skills in parliamentary procedure
also developed.

396W. Research and Writing in Speech Communication (3)
Prerequisite: Speech Communication 105.
Research techniques in speech communication. Practice in writing research reports. Satisfies University upper division writing requirement for students who have completed 60 units, fulfilled the Writing Competency requirement, and completed the General Education requirement in Written Communication.

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400. Contemporary Forensics Problems (2) I, II Cr/NC
Prerequisite: Speech Communication 160.
Identification of significant arguments in political, economic and social problems confronting Twenty-First Century United States. Use of case studies to emphasize research tools
leading to comprehensive analysis. Oral performance stressed. See Class Schedule for
specific content. Maximum credit eight units.

406. Organizational Communication (3) I, II
The organization as a communication system; role of the organization in persuasive
campaigns. Communication strategies and problems within the organizational structure.

407. Communicative Perspectives on Interviewing (3)
Prerequisite recommended: Speech Communication 135.
Application of communicative theory to interviewing situations. Emphasis on perception;
source, message, and receiver variables; defensive communication; feedback. Phrasing of
questions, ways to enhance respondent participation, and formulation of behavioral objectives.
Classroom simulation, supplemented by out-of-class interviews.

475. Intercultural Communication (3) I, II
Study of communication with emphasis on the influence of cultural background, perception,
social organization, language and nonverbal messages in the cross-cultural communication
experience.

485. Internship in Speech Communication (1-3) I, II
Prerequisites: Nine units of speech communication to include Speech Communication 105, and approval of the Director of Internships.
Prearranged and supervised fieldwork or activity extension of academic course work in
speech communication. Maximum credit six units, no more than three of which may be taken in
any one semester.

496. Selected Topics in Speech Communication (1-4) I, II
Prerequisite: Twelve units in speech communication.
A specialized study of selected topics from the areas of speech communication. May be
repeated with new content. See Class Schedule for specific content. Limit of nine units of any
combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit six
units.

498. Special Study (1-3) I, II
Prerequisite: Consent of instructor.
Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

508. Advanced Interpretation (3) I, II
Three lecture-demonstrations per week and 32 hours of laboratory per semester.
Prerequisite recommended: Speech Communication 111A.
Analysis of techniques of literary composition as guides to oral interpretation. Achievements
of the creative artist and their effect on the interpretive artist.

530. Semantics (3) I, II
Recognition of various types of linguistic meaning: logical distinctions in discourse; distinc-
tion between real and verbal disagreement; recognition and correction of semantic failures.

535. Theories of Human Communication (3) I, II
Prerequisite recommended: Speech Communication 135.
Theoretical approaches for the study of human communications; relationship of meaning,
message, and behavior in the communication process; special issues in communication theory.

560. Communication and Politics (3)
Prerequisite: Speech Communication 103 or 204.
Contemporary political communication events and processes, with a focus on speeches,
debates, and campaigns.

589. Ethics of Speech Communication (3)
Classical and modern ethical concepts applied to oral persuasion.
500. Empirical Study in Speech Communication (3) I, II
   Philosophy of social science and application to current research in speech communication.
   Theories and constructs related to communication: analysis of current research literature.
   (Formerly numbered Speech Communication 537.)

592. Persuasion (3) I, II
   Prerequisite recommended: Speech Communication 103 or 204.
   Persuasion with emphasis on psychological principles. Research project on a significant problem.

GRADUATE COURSES
   Refer to the Graduate Bulletin.

Telecommunications and Film
   in the College of Professional Studies and Fine Arts

Faculty
   Emeriti: Jones, Lee
   Chair: Anderson
   Professors: Anderson, Heighton, Jameson, Johnson, Madsen, Real, Sanders, Steen,
   Witherspoon, Wylie
   Associate Professors: Martin, Meador
   Assistant Professor: Cahill
   Lecturers: Mickelson, Van Deerrin

Offered by the Department
   Master of Arts degree in radio-television.
   Major in radio-television, with the A.B. degree in applied arts and sciences.
   Major in radio-television, with the B.S. degree in applied arts and sciences.
   Major in drama, with emphasis in design for television. See Drama.
   Minor in radio-television.

Radio-Television Major
   With the A.B. Degree in Applied Arts and Sciences
   All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."
   The A.B. degree is designed for students interested in developing a more liberal education as they develop competency in, and understanding of, radio, television and film. The A.B. degree permits flexible programs utilizing courses in and out of the department which will prepare students in such broad areas as design for television and film, media communications theory, broadcast advertising, instructional radio and television, and the like.
   A minor is required with this major.
   Preparation for the major. Telecommunications and Film 100, 110, 121, 122, 123, and 160, (18 units.)
   Upper Division Writing Requirement. Passing the University Writing Examination or English 305W with a grade of C (2.0) or better.
   Major. A minimum of 24 upper division units in telecommunications and film to include Telecommunications and Film 500 or 565 and 21 units of electives selected with the approval of the department. No more than 27 upper division units in telecommunications and film may be counted toward the 124 units required for graduation.

Radio-Television Major
   With the B.S. Degree in Applied Arts and Sciences
   All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."
   The B.S. degree is designed to prepare students for professions in radio, television and film or for occupations where extensive knowledge of these media is required.
   A minor is not required with this major.
   Preparation for the major. Telecommunications and Film 100, 110, 120, 121, 122, 123, and 160. Telecommunications and Film 260 and 280 are required for students selecting the production sequence. 260 or 280 is required for students selecting 401 in the management sequence. (21-27 units.)
   Upper Division Writing Requirement. Passing the University Writing Examination or English 305W with a grade of C (2.0) or better.
   Major. A minimum of 36 upper division units to include a core professional sequence, a minimum of six units in an allied professional sequence, and six to twelve units of electives as required.
Core Professional Sequences.

Management: Telecommunications and Film 310, 400, 500, 505, 540 and six units selected from Telecommunications and Film 401, 530, 555. (21 units.)

Production: Telecommunications and Film 401, 510, 550A and nine units selected from Telecommunications and Film 520, 530, 550, 560, 580. (18 units.)

Allied Professional Sequences. (Courses taken in Core Professional Sequences cannot be counted toward the Allied Professional Sequence.)


Criticism: Comparative Literature 562; Linguistics 551; Music 351, 355; Philosophy 523, 531, 541, 542. Speech Communication 354, 530.

Education: Education 370, 377, 383; Educational Technology and Librarianship 540, 541, 544. Psychology 330, Telecommunications and Film 570.

Graphic Art: Art 340, 341, 440, 441, 599; Industrial Arts 381, 482.

Performance: Drama 420, English 527, 572, 581W; Telecommunications and Film 510.

Information Systems: Information Systems 380, 480, 482.

International Media: Political Science 375, 577; Telecommunications and Film 363, 590.

Law and Government: Journalism 502; Political Science 335, 346, 347A, 347B; Telecommunications and Film 505.


Mass Communication: Journalism 408, 500, 503, 509; Political Science 310, 326; Psychology 330, 331; Sociology 422, 440, 480, 545, 546; Telecommunications and Film 400, 562.

News: Journalism 320, 426, 474, 475, 502, 529; Telecommunications and Film 310, 505.

Performance: Drama 330, 431, 532; Speech Communication 380, 508, 535; Telecommunications and Film 390, 391.

Playwriting: Drama 420, English 527, 572, 581W; Telecommunications and Film 510.

Production Design and Management: Art 381, 451, 481, 581; Drama 440, 448, 540, 545A; Psychology 320; Telecommunications and Film 550A, 550B.

Research Methods: Telecommunications and Film 400, Management 301, 386; Journalism 501; Psychology 322, 342, 405; Sociology 460, 464.

Radio-Television Minor

The minor in radio-television consists of a minimum of 15-24 units, 12 units of which must be in upper division. The minor is a focused pattern of courses selected with the approval of the departmental adviser for minors. Requirements for admission to the minor are sophomore standing (30 or more units completed) with a minimum grade point average of 3.0 overall and a minimum grade of B or better in either Telecommunications and Film 100, 160, 161, 315.

Radio-television minors may select one of the following areas:

Film as Art and Communication: Telecommunications and Film 160, 363, 364, 562, and three units of electives.

Public Telecommunications: Telecommunications and Film 100 or 315, 505, 570, 575, 590.

Telecommunications Management: Telecommunications and Film 100 or 315, 500, 505, plus nine units selected from the following: Telecommunications and Film 440, 400, 530, 535, 540, 576.

Obtaining courses to fulfill this minor is not easy because of the high demand for courses. Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.
UPPER DIVISION COURSES

(310. Radio and Television News Writing and Editing (3) I, II
Gathering, writing and editing news in special forms required by radio and television. This course not open to students with credit in Journalism 470.

315. Theory and Criticism of Broadcasting and Film (3)
Analysis of social, political, economic and aesthetic criticism of broadcasting and film. The function of radio, television and film in the mass communication process. Not open to telecommunications and film majors.

320. Workshop in Educational Television (3)
Open to teachers and students interested in instruction by television. The procedures and theories of television production as it pertains to closed-circuit and instructional use of television. The selection and utilization of program content and the method of presenting material through the television medium will be discussed and demonstrated. Not open to students with credit in Educational Technology and Librarianship 553.

353. International Cinema (3) I
Foreign feature films as expression of rational cultures. Maximum credit six units of which three units may be applicable to General Education. May be repeated with new content. See Class Schedule for specific content.

364. Film Classics (3) I, II
Prerequisite: Upper division standing.
Viewing and analysis of those American and foreign theatrical films, particularly of the sound era, which represent milestones in the development of the cinema. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units. (Formerly numbered Telecommunications and Film 563.)

390. Broadcast and Film Performance (3) I
Prerequisites: Drama 110 or Speech Communication 111A, and Drama 130.
Preparation and delivery of materials before the microphone and camera. Practical experience in University-sponsored productions.

391. Acting for TV and Film (3) II
Prerequisite: Drama 130.
Interrelationship between acting and the various media — radio, television, film. Experience in film and television productions. Practical experience in University-sponsored productions.

400. Broadcast Research (3)
Prerequisite: Telecommunications and Film 100.
Research in radio and television decision-making processes. Methodologies, analyses and applications of audience, programming, and advertising research.

401. Business Aspects of Television and Film Production (3) I, II
Prerequisites: Telecommunications and Film 260 or 280. Normally taken concurrently with Telecommunications and Film 560 or 580. Financing, preproduction planning, and postproduction of television and film. (Formerly numbered Telecommunications and Film 501.)

440. Broadcast Commercial Practices (3) I
Prerequisite: Twelve units in telecommunications and film.
Consideration of the structure and procedures in broadcast advertising organizations, policies, training, and evaluation of research tools. (Formerly numbered Telecommunications and Film 541.)

495. Workshop in Broadcasting (1-3)
Study of some problem in radio, television or film. Maximum credit six units. (Formerly numbered Telecommunications and Film 495A.)

496. Experimental Topics (1-3)
Prerequisites: Upper division standing, permission of instructor. Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.
560. Advanced Film Production (3) I, II
One lecture and more than six hours of activity. Prerequisites: Telecommunications and Film 260, 510, 520 and consent of instructor. Practicum in direction and production of 16mm dramatic and nondramatic films. Cameras, lighting, design, sound techniques. Experience in University-sponsored productions. Maximum credit six units. (Formerly numbered Telecommunications and Film 560A-560B.)

562. Documentary and Propaganda Film/Television (3) I, II
Prerequisite: Telecommunications and Film 160. Analysis through viewing of persuasive concepts, techniques and forms in international and documentary film and television programs.

565. Animated Film Techniques (3) II
Two lectures and more than three hours of activity. Screening of representative examples and production of a filmograph or animated motion picture. Practical experience in University-sponsored productions.

570. Public Telecommunications (3) I, II
Prerequisite: Telecommunications and Film 100. Role of public broadcasting and related technology in the United States. Applications of telecommunication technology for instruction in the home, classroom, and industry.

575. Technological Trends in Telecommunication (3) I
Prerequisite: Telecommunications and Film 100. Comparative study of developments and trends in telecommunication and related technology with their implications for the future.

580. Advanced Television Producing and Directing (3) I, II
One lecture and more than six hours of activity. Prerequisites: Telecommunications and Film 280, 510, 520 and consent of instructor. Program development, presentation techniques and individuals projects in the producing, direction and production of television programs. Practical experience in University-sponsored productions. Maximum credit six units. (Formerly numbered Telecommunications and Film 580A-580B.)

590. International Broadcasting (3)
Prerequisite: Telecommunications and Film 100 or 315, or Journalism 200. Comparative study of broadcasting in various world areas; economic, social and political determinants of broadcasting patterns.

596. Selected Topics in Telecommunications and Film (1-3) I, II
Prerequisite: Twelve units in telecommunications and film. Specialized study of selected topics from the areas of telecommunications and film. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units.

GRADUATE COURSES
Refer to the Graduate Bulletin.

University Studies
Refer to section on General Studies.

Women's Studies
in the College of Arts and Letters

Faculty
Chair: Watson
Professors: Boxer, Zimmerman
Associate Professors: Huckle, Kohen, Watson
Lecturers: Bulmash, Phillips

Offered by Women's Studies
Major in women's studies.
Minor in women's studies.

Women's Studies Major
With the A.B. Degree in Liberal Arts and Sciences.

All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements." Students majoring in women's studies must complete a minor in another field to be approved by the chair or major adviser of the department.

Preparation for the major. Women's Studies 101, 201 and 205. (9 units.)

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive semesters of college study) is required in one foreign language as part of the preparation for the major. Refer to section on catalog on "Graduation Requirements."

Upper Division Writing Requirement. Passing the University Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 24 upper division units to include twelve units from Group I, six units from Group II, and Women's Studies 590 and 595 or 597.


Group II: (Prerequisite: Three upper division units in women's studies.) Women's Studies 415, 421, 422, 430, 453, 480, 485.

Women's Studies Minor
The minor in women's studies consists of a minimum of 18 units in women's studies to include Women's Studies 101 and 201 or 205; the remaining 12 units must be upper division and include one course from three of the following groups.

Group A: Courses which investigate the experience of women in various cultures, subcultures and historical eras — Women's Studies 310, 335, 340, 341A-341B, 415.

Group B: Courses which examine biological, psychological and sociological influences on women's personality and behavior — Women's Studies 320, 325, 360, 365, 390, 421, 422.

Group C: Courses which explore artistic expression by and about women — Women's Studies 351, 352, 356, 453.

Group D: Courses which examine the roles of women in political and economic life — Women's Studies 370, 375, 430, 480, 485.

Students planning graduate work in women's studies should include Women's Studies 590 and 595.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

LOWER DIVISION COURSES
Women's studies courses are open to all students.

100. New Views of Women (1) Cr/NC
Lecture series.
Overview of new research and fresh interpretation about women, feminism and changing relationships between the sexes. Presentations from the perspective of various disciplines.
101. Women: Self and Society (3) I, II
Perspectives on women's personal and public lives. Emphasis on integrating individual experiences with social and cultural contexts.

201. Sexism and the Social Sciences (3) I, II
Imagery of women and men and their roles in society viewed through a feminist critique of conventional concepts and modes of thought in disciplines dealing with human interaction, also proposing alternative strategies for research.

205. Women in Western Culture (3)
Concepts of womanhood in mythic, classic, Judaic-Christian, and major modern philosophical traditions. Images and roles of women found in the humanities, their impact and contemporary relevance.

296. Experimental Topics (1-4)
Limited credit for five units. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

UPPER DIVISION COURSES
(Intended for Undergraduates)

301. Topics in Feminism (1-3)
Feminism from varying disciplinary and cross-disciplinary perspectives to include femininity and feminism, socialism and feminism, future dreams and designs. Primarily for the general student. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units.

310. Women in Cross-Cultural Perspective (3) I, II
Women from an anthropological perspective; social, economic, legal and ideological aspects of women's position in selected preindustrial or transitional compared with industrial societies.

320. Socialization of Women (3) I, II
Theories of socialization; summary of studies on the impact of formal and informal social institutions on female development.

325. Psychology of Women (3) I, II
Theories of the psychological development of women, investigation of biological and cultural factors influencing personality and behavior.

335. Women-Identified Women (3)
Historical, cultural, and social exploration of lesbianism in Western civilization. Topics include myths and stereotypes, homophobia, history and literature, psychological and political theories, and current conditions.

340. Women in Modern History (3)
Social, cultural, economic, political, and ideological aspects of women's history with emphasis on impact of modernization on roles of women in family and society in Western civilization.

341A-341B. Women in American History (3-3)
History of American social, cultural, economic, political, and intellectual institutions, focusing on the role and perspective of women. Semester I: From colonization to 1860. Semester II: From 1860 to the present. The year course meets the graduation requirements in American Institutions, U.S. Constitution, and California state and local governments.

351. Women in the Arts (3)
Images of women in society as reflected in the plastic, graphic and performing arts; artistic contribution of women. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units.

352. Women in Literature (3) I
Definitions of women in society as reflected in literature and literary criticism.

356. Women in Popular Culture (3)
Images and concepts of womanhood found in popular culture and mass media. Topics include critical theories, popular literature, television, women's magazines, myth and ritual, and the impact of feminism.

360. Women's Sexuality (3)
Current research and theories on the psychological, social, and psychophysiological aspects of women's sexuality, examination of the relationships among social expectations, sexual customs and traditions, and sexual behavior, responses, identity.

365. Women and Health (3)
Relationship among social institutions and women as producers and consumers in the health care system. Topics include established and alternative medical institutions, physical and mental health, reproduction and related issues.

370. Women and the Law (3) I, II
Legal factors affecting women in employment, education, health and welfare, property ownership and criminal justice, including investigation of public policy issues which affect women's lives.

375. Sex, Power and U.S. Politics (3)
Social, economic and political factors which explain women's political status and participation. Topics include institutional structures, leadership and ideology, power and authority, and the women's movement as a political movement.

390. Women and Education (3)
The educational process and female role socialization; research into personnel policies and curriculum. New learning methods and environments, e.g., women's studies programs, child care centers, and "free" schools.

415. Women, Mythology and Ritual (3)
Prerequisite: Three upper division units in women's studies. Meanings and functions of myths and rituals in their sacred and secular aspects, emphasizing their impact on women's lives and relationships in differing cultural contexts, past and present.

421. Life Cycles of Women (3)
Prerequisite: Three upper division units in women's studies. Women's developmental process across the life cycle, their impact on women, men, and the family, including life passages related to adolescence, marriage, motherhood, divorce, widowhood, "second careers," and aging in varying socioeconomic and cultural contexts. (Formerly numbered Women's Studies 321)

422. Women, Madness and Sanity (3) I
Prerequisite: Three upper division units in women's studies. Concepts of mental health and mental illness as applied to women. Theory of psychotherapy, both traditional and feminist. Alternative approaches to mental health.

430. Contemporary Issues in the Liberation of Women (3) I, II
Prerequisite: Three upper division units in women's studies. Comparative analysis of the place of women in various political theories, political and economic systems, and the processes which determine political power. (Formerly numbered Women's Studies 380)

453. Women Writers (3) II
Prerequisite: Three upper division units in women's studies. Women writers as literary artists and social critics. (Formerly numbered Women's Studies 353)

480. Women and Political Systems (3)
Prerequisite: Three upper division units in women's studies. Comparative analysis of the place of women in various political theories, political and economic systems, and the processes which determine political power. (Formerly numbered Women's Studies 380)

485. Economics of Women and Work (3)
Prerequisite: Three upper division units in women's studies. Economic factors which affect women's lives. Topics will include economic analyses of marriage, divorce, fertility and child care, women's occupations, earnings and education; the economics of sex discrimination; government economic policies and women's welfare. (Formerly numbered Women's Studies 385)
538 / Women's Studies

496. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree.

498. Field Experience (3) I, II
Prerequisites: Three upper division units in women's studies and consent of instructor. Observation and analysis of public and private agencies in the San Diego area which deal primarily with women.

499. Special Study (1-3)
Prerequisites: Three upper division units and consent of the department chair and instructor. Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

590. Feminist Thought (3)
Prerequisite: Six upper division units in women's studies. Readings in feminist theory and contemporary theoretical perspectives on core concepts and issues in feminist scholarship. Focus on understanding from a feminist perspective and on the significance of analyzing female experiences.

595. Seminar in Women's Studies (3)
Prerequisites: Six upper division units in women's studies and consent of instructor. Directed research in women's studies. Field of investigation will vary with instructor. Methods of investigation, development of bibliography, presentation of paper based on original research. See Class Schedule for specific content.

597. Research Project (3) I, II
Prerequisites: Six upper division units in women's studies and permission of adviser. Individual research project. May be taken in place of Women's Studies 595. Seminar in Women's Studies.

Zoology
In the College of Sciences

Faculty
Emeritus: Bohnsack, Crouch, Harwood, Huffman, Kaston, Norland, Olson
Chair: Estes
Professors: Atkins, Carpenter, Chen, Cohn, Collier, Dexter, Estes, Etheridge, Hunsaker, Krekorian, McLean, Monroe, Wilson
Associate Professors: Archibald, Avila, Plymale, Welter
Assistant Professor: Metten
Lecturer: Berta

Offered by the Department
Master of Arts degree in biology with an emphasis in zoology
Master of Science degree in biology with an emphasis in zoology
Major in zoology with the A.B. degree in liberal arts and sciences
Major in zoology with the B.S. degree in applied arts and sciences
Single subject teaching credential in life sciences in the area of zoology
Minor in zoology

Prospective majors in the biological sciences should contact their departmental offices regarding impending curricular changes.

Zoology Major
With the A.B. Degree in Liberal Arts and Sciences
All candidates for a degree in liberal arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."
A minor is not required with this major.

Preparation for the major: Biology 215; Botany 200; Chemistry 200, 201, and either 230 or 231; Mathematics 121 and 122, or 150; Physics 180A-180B and 182A-182B; Zoology 200. (36-39 units.)

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. It is recommended that students select French, German or Russian to satisfy this requirement. Refer to section of catalog on "Graduation Requirements."

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 24 upper division units to include either Biology 411, 430, 501, or Biology 411, 502, 503, and 12 units of zoology selected from 400- or 500-level courses at least two of which must include a laboratory.

Zoology Major
With the B.S. Degree in Applied Arts and Sciences
All candidates for a degree in applied arts and sciences must complete the graduation requirements listed in the section of this catalog on "Graduation Requirements."
A minor is not required with this major.

Preparation for the major: Biology 215; Botany 200; Chemistry 200, 201, and either 230 or 231; Mathematics 121 and 122, or 150; Physics 180A-180B and 182A-182B; Zoology 200. (36-39 units.)

Foreign Language Requirement. Competency (equivalent to that which is normally attained through three consecutive courses of college study) is required in one foreign language as part of the preparation for the major. It is recommended that students select French, German or Russian to satisfy this requirement. Refer to section of catalog on "Graduation Requirements."

Upper Division Writing Requirement. Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

Major. A minimum of 36 upper division units to include either Biology 411, 430, 501, or Biology 411, 502, 503, and 12 units of zoology selected from 400- or 500-level courses at least two of which must include a laboratory. Remaining 12 units
from the following courses: Chemistry 310A-310B, 361A-361B, Microbiology 310, 400- and 500-series biology, botany, chemistry, microbiology, and zoology courses. All courses not on this list must have prior approval of the Zoology Department Chair.

**Emphasis in Entomology**

**Preparation for the major.** Botany 200, Zoology 200, Biology 215; Chemistry 200, 201, and either 230 or 231, Geography 103, Mathematics 121 and 122, or 150, Physics 180A-180B and 182A-182B, (41-42 units.)

**Upper Division Writing Requirement.** Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

**Major.** A minimum of 36 upper division units to include Biology 503; Botany 503 or 514, plus 562, Zoology 421, 421L, 524, plus either 523 or 527, plus either 525 or 526, plus eight or nine additional units selected from above courses not already taken, Biology 411, 519, 526, Botany 526, Chemistry 361A, Zoology 522, Geography 605 selected in consultation with entomology adviser.

**Zoology Major**

*For the Single Subject Teaching Credential in Life Sciences*

All candidates for a teaching credential must complete all requirements as outlined in this section of the catalog under the College of Education. This major may be used as an undergraduate major for the B.S. degree in applied arts and sciences. Candidates for the single subject teaching credential must be recommended for the program of the College of Education by the Biological Science Credential Screening Committee.

**Preparation for the major.** Biology 215; Botany 200, Chemistry 200, 201, and either 230 or 231, Mathematics 121 and 122, or 150, Physics 180A-180B and 182A-182B, Zoology 200, (38-39 units.)

**Upper Division Writing Requirement.** Passing the University Writing Examination or completing one of the approved writing courses with a grade of C (2.0) or better.

**Major.** A minimum of 36 upper division units to include Biology 400 and either Biology 411, 430, 501, or Biology 411, 502, 503; Botany 514 or Botany 530 and 531; Microbiology 310; plus a minimum of 12 upper division units of zoology to include Zoology 510 and any two of Zoology 421 and 421L, 503, 506, 540 or 570; and five units of electives selected in consultation with the Life Sciences Teaching Credential Adviser.

*The major for the Single Subject Teaching Credential has been submitted to the Commission on Teacher Credentialing. Consult department to verify current program requirements.*

**Zoology Minor**

The zoology minor is intended to provide recognition for a reasonable amount of study in zoology and related fields by students majoring in other subjects. The minor consists of 20 units in the biological sciences to include Botany 200*, Zoology 200, and, 12 units in the upper division, at least seven of which must be in zoology.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable.

* Additional prerequisite required.

**LOWER DIVISION COURSES**

**100. Evolution and Diversity of Animals (3)**
Animal adaptation and diversity and their relationship to the development of evolutionary theory.

**100L. Evolution and Diversity of Animals Laboratory (1)**
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Zoology 100.
Laboratory course on evolution and diversity of animals involving field trips and laboratory investigations.

**UPPER DIVISION COURSES**

**308. The Human Body (3)**
Survey of the human body with emphasis on intricacy of the design and integration of the various organ systems. Not open to students majoring in nursing or physical education or with credit in Zoology 108.

**308L. The Human Body Laboratory (1)**
Three hours of laboratory.
Prerequisite: Concurrent registration in Zoology 308.
Examination of the organ systems of the human body.

**314. Natural History of the Vertebrates (3)**
Two lectures and three hours of laboratory.
Prerequisite: A college-level course in a biological science.
Natural history, distribution and classification of vertebrate animals; emphasis on local forms. Not open to zoology majors.

**330. Life in the Sea (3)**
Prerequisite: College level course in the biological sciences.
Overview of complexity of marine life: Diverse interactions of organisms in the intertidal zone, over the continental shelves and in the open oceans. Current controversies concerning the marine biosphere. Course cannot be used by majors in biological sciences to satisfy upper division major requirements.

**340. Sociobiology (3)**
Prerequisite: Anthropology 102 or Biology 100 or Psychology 101 or Zoology 100.
Biological bases of social behavior with emphasis on evolution, cooperation, and adaptive significance of social behavior. Not open to biological sciences majors.

**421. Introductory Entomology (3)**
Prerequisite: Zoology 200.
Morphological and behavior adaptations, natural history, and overall importance of insects.

**421L. Introductory Entomology Laboratory (2)**
Six hours of laboratory.
Prerequisite: Credit or concurrent registration in Zoology 421.
External and internal structure of insects, insect classification.
460. Vertebrate Zoology (4)
Two lectures and six hours of laboratory.
Prerequisite: Zoology 200.
An introductory course in the biology of the vertebrates with emphasis on the vertebrate organism as a whole, anatomy, physiology, development, and evolution.

480. Endangered and Extinct Species (3)
Prerequisite: Completion of the Foundations of Learning requirement in the sciences.
Examination of reasons that some plants and animals become rare, endangered and extinct. Emphasis on man's activities as pressure that often leads to extinction.

496. Experimental Topics (1-4)
Selected topics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 496, 496, 596 courses applicable to a bachelor's degree. Refer to Class Schedule for lecture/laboratory format.

498. Methods of Investigation (2)
One discussion and three additional hours to be arranged.
Prerequisite: Consent of instructor.
Selection and design of individual research in zoology, oral and written reports. Maximum credit four units for Zoology 498 or a combination of this course with Microbiology 496.

499. Special Study (1-3)
Prerequisites: Fifteen units in biological sciences with a grade of A or B and consent of instructor. Individual study. Maximum credit six units.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

503. Embryology (4)
Two lectures and six hours of laboratory.
Prerequisite: Zoology 200.

506. Comparative Anatomy of the Vertebrates (4)
Two lectures and six hours of laboratory.
Prerequisite: Zoology 200.
Dissection, study and comparison of organ systems of representative vertebrates.

507. Advanced Human Anatomy (4) I, II
Two lectures and six hours of laboratory.
Prerequisite: Zoology 106 or 506.
Comprehensive whole body dissection with primary emphasis on laboratory participation. The dissection will be from a regional aspect.

508. Histology (4)
Two lectures and six hours of laboratory.
Prerequisite: Zoology 200. Recommended: Microbiology 310 or Zoology 108.
Descriptive microscopic anatomy of cells, tissues and organs of mammals with special emphasis on humans.

510. Marine Invertebrate Zoology (4)
Two lectures and six hours of laboratory.
Prerequisite: Zoology 200.
Structure and function, ecology, behavior, physiology and phyletic relationships of marine invertebrate animals.

512. Special Topics in Marine Invertebrates (3-4)
Prerequisites: Zoology 510 and consent of instructor.
Treatment of some aspect of marine invertebrate zoology such as invertebrate embryology, intertidal ecology, or special experimental approaches. See class schedule for specific content and lecture/lab format. May be taken twice with new content. Maximum credit eight units applicable on a master's degree.

511. Ichthyology (4)
Two lectures and six hours of laboratory.
Prerequisite: Zoology 200.
Identification, systematics, evolution, structure, physiology and behavior of fishes.

516. Herpetology (4)
Three lectures and three hours of laboratory.
Prerequisite: Zoology 200 and consent of instructor.
The origin, evolution, distribution and systematics of amphibians and reptiles of the world.

517. Ornithology (4)
Two lectures, six hours of laboratory or field excursions, and a field project.
Prerequisites: Zoology 200 and consent of instructor.
The study and identification of birds, especially those of the Pacific Coast and the San Diego region.

518. Mammalogy (4)
Two lectures and six hours of laboratory.
Prerequisites: Zoology 200 and consent of instructor.
The evolution, systematics, distribution and ecology of mammals of the world.

522. Special Topics in Entomology (3-4)
Two lectures and three hours of laboratory.
Prerequisites: Zoology 421, 421L.
Treatment of some aspect of entomology, such as biological control, microbial control or forest entomology, not covered in regularly scheduled courses. See Class Schedule for specific content. Maximum credit nine units. Maximum credit six units applicable on a master's degree. Format of course to vary according to the nature of the selected topics.

A. Lecture course.
B. Lecture and laboratory course. See Class Schedule for lecture/lab format.

523. Immature Insects (3)
Two lectures and three hours of laboratory.
Prerequisites: Zoology 421, 421L.
Collection, preservation, identification and biological study of the immature stages of the different insect orders. Course designed to meet the needs of students specializing in invertebrate zoology, agricultural and medical entomology, parasitology, and systematics.

524. Insect Ecology (3)
Prerequisites: Biology 411 and Zoology 421, 421L.
Ecological principles as applied to insects, including consideration of crop ecosystems in relation to insect and mite outbreaks.

525. Economic Entomology (4)
Two lectures and six hours of laboratory.
Prerequisites: Zoology 421, 421L.
Course designed for students of entomology or agriculture and horticulture. Emphasis is placed on determination and control of insects affecting plants. Quarantine measures are also studied.

526. Medical Entomology (4)
Three lectures and three hours of laboratory. See Class Schedule for lecture/lab format.
Prerequisites: Zoology 200 or Microbiology 310. Zoology 421, 421L required for students in entomology.
The role of insects and other arthropods in the transmission and causation of human diseases and the important diseases of domesticated animals.

527. Biological Control (4)
Three lectures and three hours of laboratory.
Prerequisites: Zoology 421, 421L.
Theory and implementation of biological control of arthropods and weeds. Emphasis on role of natural enemies, including insect pathogens, in the regulation of pest populations. Recommended for students specializing in entomology, botany or applied ecology.
528. Insect Physiology (4)
Two lectures and six hours of laboratory.
Prerequisites: Zoology 421, 421L, or an upper division course in physiology; and Chemistry 230 or 231.
Description, theory, and experimental analysis of all major physiological processes in insects.

535. Parasitology (4)
Two lectures and six hours of laboratory.
Prerequisite: Zoology 200.
Study of animal parasites with special reference to those of humans. Laboratory including identification of important human parasites, and collection and preservation of local forms.

540. Physiological Zoology (3)
Prerequisite: Zoology 200. Recommended: At least one course in each of college algebra, chemistry and physics.
A comparative and evolutionary study of the functions of organ systems and their environmental significance.

555. Principles of Taxonomy, Systematics and Phylogeny (4)
Two lectures and six hours of laboratory.
Prerequisite: Any one of the following: Zoology 200, Botany 501, 502, 503.
Basis for the classification of organisms. Modern concepts and their application in zoology.
Specific problems in laboratory and field.

560. Vertebrate Paleontology (4)
Two lectures and six hours of laboratory.
Prerequisite: Zoology 506.
Advanced studies in the evolution of vertebrates, including relations to earth history and topics in paleoecology and functional morphology. Field and laboratory techniques and exercises in identification are included.

570. Animal Behavior (4)
Two lectures and six hours of laboratory.
Prerequisites: Biology 215; Zoology 200 or Psychology 210 and 260 for psychology majors.
Biological bases of animal behavior with emphasis on the ethological approach, including the evolution and adaptive significance of behavior.

580. Aquaculture (3)
Prerequisite: Zoology 200.
Principles and practices of the farming of aquatic organisms.

GRADUATE COURSES
Refer to the Graduate Bulletin.
<table>
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<tr>
<th>Name</th>
<th>Position</th>
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<tr>
<td>GUIDRY, ROSALIND</td>
<td>Associate Professor of Social Work</td>
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<td>GUILLO, CLAIRE</td>
<td>Associate Professor of Nursing</td>
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<td>GUMMEND, JUDITH G.</td>
<td>Associate Director, Placement Services, Center for Counseling</td>
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<td>GURPAR, DIPAK K.</td>
<td>Associate Professor of Public Administration and Urban Studies</td>
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<td>HAMPTON, DAVID R.</td>
<td>Professor of Management</td>
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<td>HAWKINS, ALICE E.</td>
<td>Professor of Family Studies and Consumer Sciences</td>
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<td>GULINO, CLAIRE</td>
<td>Associate Professor of Mathematics</td>
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<td>HEMINGWAY, C.</td>
<td>Assistant Professor of Mathematics</td>
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<td>HORTON, J.</td>
<td>Professor of History</td>
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<td>HART, HOWARD</td>
<td>Professor of Biology</td>
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<td>HARRIS, MARV E.</td>
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</tbody>
</table>
HUNRICHS, WILLIAM A. (1957) Professor of Psychology.
HORNBECK, FREDERICK W. (1968) Assistant Professor of Psychology.
HOOPES-CORAM, LOIS (1980) Assistant Professor of Social Science.
HUNTER, LAWRENCE B. (1963) Professor of Biology.
HUTCHINSON, GEORGE (1973) Director of Student Outreach Services.
JANSSEN, HENRY L. (1953) Professor of Computer Science.
JENSEN, REILLY C. (1970) Assistant Professor of Accounting.
JENKES, CLINTON E. (1964) Professor of Economics.
JENKINS, LYNN M. (1980) Professor of Economics.
JENSEN, REILLY C. (1958) Professor of Chemistry.
JENKES, CLINTON E. (1970) Professor of Psychology.
JENKINS, LYNN M. (1980) Professor of Economics.
JENKES, CLINTON E. (1964) Professor of Economics.
<table>
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<tr>
<th>Name</th>
<th>Title and Institution</th>
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<tr>
<td>LOCKE, WILLIAM P. (1974)</td>
<td>Dean, College of Extended Studies; Special Assistant for International Programs; Assistant Professor of Public Administration and Urban Studies</td>
</tr>
<tr>
<td>LODGE, CHESTER R. (1954)</td>
<td>Professor of Electrical and Computer Engineering</td>
</tr>
<tr>
<td>LOGAN, JACK D. (1969)</td>
<td>Professor of Music</td>
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<tr>
<td>LORWIN, ROSALIND A. (1964)</td>
<td>Professor of Psychology</td>
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<tr>
<td>LOVELY, LOUISE P. (1979)</td>
<td>Director of Library and Media Services, Imperial Valley</td>
</tr>
<tr>
<td>LOVEMAN, BRIAN E. (1973)</td>
<td>Professor of Political Science</td>
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<tr>
<td>LOVEGROVE, CATHARINE E. (1980)</td>
<td>Professor of Nursing</td>
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<td>MARCUS, ARNOLD (1966)</td>
<td>Associate Professor of Mathematics</td>
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<td>MAY, LOUISE (1973)</td>
<td>Associate Professor of Geology</td>
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<tr>
<td>McCABE, ROBERT E. (1968)</td>
<td>Coordinator of Affirmative Action; Professor of Secondary Education</td>
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<tr>
<td>McCLELLAN, CLARKSON (1967)</td>
<td>Professor of English and Comparative Literature</td>
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<td>MEAD, KATHLEEN (1974)</td>
<td>Associate Professor of Health Sciences</td>
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<td>MEADOWS, EDDIE S. (1972)</td>
<td>Professor of Music</td>
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<td>MEDCHIFF, ROBERT A. (1981)</td>
<td>Associate Professor of Physical Education</td>
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<td>MEDER, T. (1973)</td>
<td>Associate Vice President for Academic Affairs</td>
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<td>MEGGS, ROBERT F. (1972)</td>
<td>Professor of Accounting</td>
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<td>MEIER, RALPH H. (1973)</td>
<td>Professor of Rock Science</td>
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<td>MELENDA, J. (1966)</td>
<td>Professor of Psychology</td>
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<td>MELOY, JAMES D. (1958)</td>
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Peer, Robert W., Ph.D., Communicative Disorders
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PROFESSIONAL STUDIES AND FINE ARTS
Alexander, Meredith, M.F.A., Drama
Andersen, Kristen M., M.A., Speech Communication
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SCIENCE
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IMPERIAL VALLEY CAMPUS
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EDUCATION
- Acuna, Celia, M.A., Multicultural Education
- Clower, Steve B., B.A., Elementary Education
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ENGINEERING
- Beck, Stephen A., M.S., Mechanical Engineering
- Biren, Edmund, Ph.D., Mechanical Engineering
- Chiang, Jung L., Ph.D., Electrical Engineering
- Dagan, Baruch, B.S., Aerospace Engineering
- Francis, Peter R., Ph.D., Mechanical Engineering
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- Kerton, William, B.A., Mechanical Engineering
- Matthews, Jack, B.S., Mechanical Engineering
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- Nasir, Morris B., B.S., Mechanical Engineering
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HUMAN SERVICES
- Allen, Ellen M., Public Health
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